CENTIMETERS



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A SELECTIVE MICROFILM EDITION PART V (1911–1919)

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Thomas A. Edison Papers

at
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A Note on the Sources
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NOTEBOOK SERIES NOTEBOOKS BY EDISON

Notebook Series -- Notebooks by Edison Notebook, N-14-10-04

This notebook was used during the period October-November 1914. It is the fourth of a four-book series, preceded by N-14-09-30. The entries, which are by Edison and an unidentified experimenter, pertain to the Condensite varnish surfaces applied to disc record blanks during the transfer and printing process. Entries toward the beginning of the book describe experiments relating to the ingredients and chemical reactions involved in making different varnish compounds. Among the subjects of Edison's experiments are varnishes containing varying amounts of phenol, alcohol, "para" (paraphenylenediamine), "penta" (penatchloraphenol), "6/4" (hexamethylene tetramine), phenylhydrazine, and other compounds. Archie D. Hoffman and Frederick Ott assisted him in these experiments. Other groups of experiments involved resin from the African sandarac tree and the synthesis of phenol (in short supply because of the wartime naval blockade against Germany) from benzol. At the end of the book is a four-page table by an unidentified experimenter summarizing the manufacture and condition of records made with varying amounts of 6/4 solution and varnishes from different numbered lots. Inserted into the book are several loose pages of notes by Edison pertaining to experimental varnishes made with dammar, a botanical resin. Another page contains a drawing of distillation apparatus, possibly by Jonas W. Aylsworth. The front cover is labeled "Disc 4 Records." The pages are unnumbered. Approximately 60 pages have been used.

15 E 25 planal 6 % 6/ 3 Chlorenalid Salvent Nap 5 Does 5 gran Lot accorded Hond to get any seevin -Crystaly out bad-16 E 25 plenal Perna Chicomunitad Balvery May Went VEry theat of Orgalized out bad not much beeven -Towardend woken Theck I formed land - NO17

17 de planel
6 6/4
1/2 para
18 Penta Red behi crystal yal
from alsocial of ney
The feula from which
lles to mente from is
Othedina Sof planta graf
out by Mey

This criptings and like act the relations 15+16 blice alcahal as Evaporated the 6/4 disalves good in the pleud Peuts a makes a night year trasmi

Evidently the function of the Penta is to prevent 6/4 from a Chapter Schucker or it makes it though schools in should be feeting place after the comment of the comment of

18 F. test Los full 5 alwarded
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tube full and alcoholic Churcuma
about grammum on 12 9 - creeps with
with John - cryptul back Comen I from the

| C | Est lubs vill Sat 6/4 -| gram Whys absolute Extraction Solid from Alkala Salt Extraction Pletta - Thus is not very sophiate Scarcely 1/2 went into socialism. Crease + without Pan time with advantable of contraction for any of any company will pain I will will will also after the formy. K 20 Deep 18
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an Expression Expression with para

21 Deeps 18
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Cold preseptation aut
No glor Georgalalyse Emily

22 Dup of 18 Extracted by E from Creedo Penka Con accalal no ackaci afterpowling out robortly after Considerable flocallent wiff Comes out in Liquid There is no aryaladization - "Settles out as mud - very bille Creeper Compound to 23 - only bed feature if it is bad to their untike other chamicals in The group a Large sum and seller put there were there or hat described a guerra contra out no it was 23 Dup af 18 gram Hum Danemer WEight of abokal used in all This accus to prevent crystalegalion

to a Cartain Extend will be and them without considerable freeze

Aofan as 18 to 23 Expli

The ponta extract by nie leaves fine crycles 19 Elen Tarin Comer out as acdement but there is no final conjully

of 6/4 Etter weth or continued forms to struggly or mud when all way .

bath Consei + 23- Danumar feel no cryptrale un enther come

Think the will prevent 6/4 from forming countries of any cogs. 3th deffamile to Looking in alachel must fend possedling to sell (s accollects maranak colombele

Low rund be guile low of only 201 31/2 weeks,

all these Expute and temp Amount of malerial disolved or whould have desilered in alsaturaled with 64 18- unknown 8.6 gramm in 145 grown al-best didalled · Vany little dis 21 8.6 neally all of welves 80% 17 22.8.6

On healing 20 Condenses =

Equivolent to 8.6% of Reson of all dis -860- Will at Pera dwall of m 145 al. all dis

23 8.6

no precedentales -

dooks as of Dammas & Edeson Extract of Penda - Louis 2 parat # 4 paula Instead 6 to stop settling out as mud would be bast, for Vobenina.

Inotice 22- Part left, in bottle nearly all mud scelled out its undlundely no changed by pulle in some algoholic aumonia -

22 = 9 also notice that a new portion of ZZ is very bolin. Dever alcohalic acumoria of 6/4 accounts devalor OKnote - NO 24 50 alcohal DEN at 80 Falus just porces600 by much Olinkung to get 5 grows 6/4 day with t = at 66 falm we cae Chart welling Cryptalizes and I now add I taralus penta dolu Olashal Works The factor by Edina - Nearly all disactors Light flooring stuff very owner in grankity Note 50 grus abookal 4 grams water adda Enormously mareases

Walo, thenof sold of Lille according ancurred put in just enough To make it diquid ino more morealing its bulk very little Does not no solid in Refrigular clase to Ped -· English No 25 lote = ad 82 Februs 50 grown our Red Thu aleahol to to which of grows coaler added Disolves 82 Twice as much as aldohal · Celoue - nothing chilliant at 700 Vate - from Expt 22 Edwar alashalic Extraction rea Venta - Muddy - by addum I telle alashold command Clears some adding coaler pret a lelle aleans et more present prom 22 sport -

25 Coulin & part 12 grand of alsoholi. Extract from bounded boule weeks by Extraon - it develops about as well as in 24 - Cart say that here is any that here is any that here is any the couling the country of course and 24 - by close of any the country of the 24 - by close of any through the country and appears that 25 is more middly than 24.

I now put I gram of Fora in 24 + 25. This is egrad to 3% para in rounish —

Bith 24 4 25 Pentro settles out beet not so quirok so a coeltant it class at about alar best samp fine - bat alary got thunked than 2 24 sol seems got thunked than y 24 out the petale.

Alcoholic aunitoria un hall 24 4 25 - rough

Acomo to Keep cleaned + don't realise selling out in 10 minutes Cent its hourd to see Sol dan't

Cycle by a scan on top - 6 comment to 15 t

gave Hoffman following Oct 4 5 logal Laf of Vacuuskes to DE now put in 30 gram make: -Rein In 24 at 4 25 Use all the same resultas near 16.5 perz phenal as posseble 24 4 25 - Before Rosin bring to 22% ferraphenal notice alcoholic anumonia un 2% depha naphlal 26 2 para 7.9 7 24- that its Evap way down 3% Jum Danemar datill appears legued - pretty 2% Penta nothing elacop. 28= 2 para 7.9# of 6/4 because its lander 29 3 pana 7.97 This looks as if a letter 4 Peula 1/2 waler 30 2 para 7.97 ammorium hed Everyla 4 penta 3% coaler Clear in 24 to the Eld 31 2 pana 7.97 of way 62 Uslful 31/ strong ammonia-32 = 2 para 7.94 Especially cotion Reservision put ammonia in alcohol feret . before devolving other Things -

Note-Wela cresal is only begin in not cresal like Pance or chilled it may be the that gives are in pende accey most chlominated cerementals.

Dhennishydragine Co H3 NH, NH, Doll 233 Chat Solution colon Cold to filmer when the west 23 Cent Veny Rose allowing host for decoding Aldeligates Kelvins Wilyn Mite and Might annuals - Head webs 43 C

Recycle trickle - pleny Chlorofore needed from Bouling I observe by Chlorom - CH5 CB5 vallow logger - penderal odor Flads 213 Cent odor Flads Dy2 milandy

Perhaps Var want something Extremely scall-markle at and und comparation like the scuff in parts. That an ald Van on my deak Meide (heis 145 allahut 100 Resm 4 Frichtorophenal

4 Frichtoroph

6.6 free phonet pear in It was pretty thick been on take

I put un tomph 6 grams of alcoholic amunition of whook it I noticed which powered on dish it was Convex wherean

24 4 25 were Concrue

25 didn't have all its team devalved but only 200 3 grams not dis - 24 head acoust /2 gram rent des accord, put a cure 9,70, pu perton labellos 952 puis -

at 10:5 old van give some gas
lectblei - 24+25 clear

24+25 at 1015 beth Rubberry

24 has very few few butter

25 how communite fine
4 act van hills on surface
but no bubble corresponding

to the hills on surface
but no bubble corresponding

at 10 30 pmi
At Rubberry clage larger
bubbles appear on 24 25

4 old

24 with 10 gran water

Rubbary at 1040 pin -

In No 24 - I add 10 grams of water + shake, it Keeps Clear but appears to tucken - pour a Cultur Vut in 8 more gram This to Las much class on asterlas the 18% wales Var settles out in Couler of seperation from the water although 10% 24 has not done it it clear oct 10 45 \$24 15% water peet Green secono 124 15/. HeD would be the secono 12 pent It of medial of place but only for a menule + them put it learth ou and solor at 1050 fact 241 + 25 might one Metal of plants also old Van

All these Exputs with 244 25 Shows that water may play an important part in the Varnush
Ceks that a a unpersonal farge amount of coaler Can be used without your beautiful effecting the Varnush -

On account of the operat schooling of the well of a totale colorer we vare will keep to well wired with the resum a prevent Crystalization also Reap firs obland liquid a prevent throm Crystalization the Cold produced by Rapid was at the clashol Perhapis the animonia helps to keep the peula un cohelian growtholy tries Var sooned with para then of only para lined The old Var seems MG puffo up- Lato bubbles 4 Rotten - I was 1/2 fored cery way Jack all off - at 11 fem Deripped - 10 + 18% water 1024 Have white bollow where water selled -Lucks as if 5% wales was limit- but 7% on their flast plate where There is no low place for water (, Consentrate,

All are rubbery but none are hand y leave them on all right.

24 a 25 milet on plate for accord how Corbared go hand alle (three 1/16 to 3/2 is the change of milet (when 1/16 to 3/2 is the change of milet (in the change but to Very hand with 18/2 walls also Conly Event hearthar them without 18/4 with 18/2 coales Even better

Note - Weed So weeds Even better

Whele - Weed So weeds E/4 is all that they have become all asked at heart of plate 240 feels preshably next at any heart,

Try Phenetal

Ellylic Ester of Estenol.

Ellylic Ester of Estenol.

Ellylic Ester of Estenol.

Ochthologic

Gaybard, Na Sulphormati with

Ma phonylate Co H5 O. C2Ho

Oliv xignin Bodo 172

Sp grav 10,9822

Anisol.

Ausenie ceen

phihacia a

und themy hydrazine is promising ad to a liquidat or marce temp, Thick, oily - It desoleres some 6/4- settraled could 6/4 it don't concerne, unt vielelle + will stay as a liquid in Vencer - but Lat phlace 49 to say I slengthyzum well alacked + sirong 6/4 Rowed on days It condon to fine deep readresin with ine Surface no butles Vallhough put plate right on 240 Fell Looks axtricult thengthy brazins from Autin by Yellow ered brown aid Co Ho- NH. NH2 Absorbs Oxygen from the air 4 reddens Slightly Sol Water Soldfres to plate in Cold meet, 23 Cent Goil, 241-2 -Keep well aloppened battle -

25cc Reg Very 903 5 gran schenglaydroons at 1030 NG Oct Frahad up med

All 26-27-28-29 powed on flat
white butter debtes at 615 pm
Oche/if at 7.50, thick beautiful surpres
Jat 755 all putton debtes on that
plate in 2 mm some very pric
beither after 29 The mout
26 2m - thouse it the Shauphyriga
at 935 pm none have gone vides
26-27 about same bubbles as one
26-127 about same bubbles as one
28 more have led have read
af fine bubbles books as of
Cooke

Of 9.37, pm put all right on metal

Exput with thenythydrazine

25 CC Reg 703 Var

Ruletry at 9,50 pm.
This is only one only good, the stell in rubber along at 10 step to sold off it puffed in one port and a lich to plate with good 10 work with 100 E 200 mills - 1 years extended to much or plate with 100 million of 420 mills record with the Commodern raw for your 27 without peacets

25cc Reg 903 Vers 2 gram phonylhybrosine

Rubbery of 10.7.

28

25 cc Reg 903 Van 3 grams Dieughhydrogen put on haller glace 10 50 put the missing rece purfted up NG observations recent Water I gram thoughtydrogene too much the 104 of Reven - Much from 100 to 250 milyonem Getter

quay 6 E OR = 1

100 wilg Glasine phor The glacial Even 100 mily don't acem to devalue at acc - ques whole Experiment is a failure Just in heller dealer at 1130 pur dues ace night put on Luck good-Oll those come off The deals Early + free- off at 230 pm level Theirs neglected theen + they were peckensey OK Long fatorathis = no lefts funcional in bubbles since dried 30 4 33 scarcely any bubbles 33 the least May be sowething in

30@ 33 plas aread

34-Dup of 30

Try- of Effect of acidi-250 Milg Glacial plias acid 25 cc Rea Ven 500 wilg glacine place a 25 cc Reg Van 1 gran glassine phas a 25 cc Reg Var 2 grains glaccal planacid The apers of underslored phos need is seen in the lower form of the bruner " I few of of meial is changed dissolved -

Lowred out at 1100 pin un. butter deshis - devied all might this morning termany at 930 km found all full of bulkles showing weest to chouse action but on the serion at 930, am Hoffman bret u some Recen he marked Not dehydrated or some mented by dehydrated The Not Dely had by lest 16.6 free phenod The DEhydrated 14.80/s pecepl

Instead of worning reg 903 I make follow
34
20 grams Resus
29 alcohol
1580 Mily 6/4
200 " Para
100 " Thempthydrazina

35

Dup but with 200 Mily Phenythydrazine

36

Dup with 900 mily

37

Deep with 800 Mdg.

Aby all black but 37 Maght red transpt shows measing to the transpt

The separate beat

39 he lever better
30 he lever better
30 he lever better
The nomenon

Only coant a very lette

10 of at/s to 5 % of the

Mote = 6/4 Elants to decompare anound 200 Falm truthing a little at 210 Falm -

38 142 Dup

Gos var Kick forend en 100 60% added about gram or gran 4/2
Sepreper schadplion 10 glasse poursed two butler develop late
bubbles from whateng the
Verrundi -

39 -Deep 38- but 5 grams pertural shave

To 8 gram put in preasphales

...

Id offeren madeforme a battle Yan, for use in Expulg-now in ree chest 100 Resin 166 Greathen-54, Extra phensal 7.9 6/4 140 Alsohal no Penen or Paris

NO45 is a little Para put in Colors Van white, pracip -

41=442

I put 3/6 high in round part of 1/2" Lest tube of globaline phosphoris are in them felled best tube with alachal to within I such of top or used about 25°CC of Pay Van without pente or para 1/20°CC of Pay Van without pente or para 1/40°CC of Pay Van without pente or para 1/40°CC on 3/8 met of length of text libra in 414 42°C powered of them put in same bulk again we year to put 1/40°CC or 1/40

434 44

When put ou constastos quink lote bubbles, Consense un I home

how tested it fund school and does breach 6/4 but it alwalve. In facional of alcohol a therefore well to of Adewalve in the Var of small have a fund of the standard of the st

46 = Ver no para at penta Bug penal ley choquimone -C. They Small greately of gracial oflar syrup or Hydrochenon make a vener on buller duch that Caunal be I crackly by the funger nail of is tough cut like Calheland after being on hat plate all night Using Reg V welland 18 Para or Deuta PHEHOMENON

Old Penta NG washed acid fire water Goded out -20 gramme put in -100 at 50 water 100 al 25 100 af 20 100 al 15 all are fillered 100 af 10 of duny-100 al 5 100 al -Old Peula The alaokolic Defection is light yellow or Even 100% at is light Where as New Peuta is despor, after filler Old Penta dont give a prescap out of colanhal whereas new Peutin our Tourdaing does but OP may do so when it stands same laugth of time, Old don't affect to have much dis out by 100@50 water coleran NP againsto have considerable

LUEIght Residue after alcoholic Extraction 5.280 14720 9.410 8 680 10 590 11-320 12.280 11.190 7.720 8 810 12 588 12.450 7 550 7 420 8 660 11 340 12.590 12.390- 15,140 4 610 4 860 12 980 13.060 7 020 6940 20 chiamo used

New (of penta 85@90% 900)

100 Of 50 water 100 of 25 " 100 of 15 " 100 of 10 " 100 of 0

all are fellered of drugues

Dandarrell Resin is very position dup from alactions Sol lite Van when Cold Entitle notations when host met and alachy has fine our peak that has been flower - Copal lander very little from better dest globulte at are slicky hot. Bell Martist Copals

making 10-gal batale Reg Very 7.9 4 No Petits or Para best wall & per cent of pharphoric Received symposis of pharphoric Received Mic cool of Pharphoric that is all 95% alcohol will dusalve, so this must not be Execeded 90% alcohal. 150 gC and T'z CC. water added making 15%, 5 CC disolves I gram + 250 milgrammes I now put 250 mily more Chloride of Anmonta in to ace if it will disolve by long shaking 250 more mily by WH4Cl discour making 12 gramo all logether In 1572 CC 90% alcohol. date 3rd 250 mily more gone in making 1.750, grans altogether The 4th 250 get in- making 2 grams to 157.5 CC alsohol

Old Exploring Chloride of aumonium -5% only 38% Is solumble V 385- Frevelease Transfers 100% no para or Penta 83% 100% Comel 83 or 100/ Comel 512 58./ 01 75% Comes 513 91% or 100% Counce 79.1.1.01 87.5 come 2 Para 540 All plates from overs look very bad, pockmarked, Matte surface, very few discords Transfers slightly smudgy Looks good-May be we Use too much NHCP-150 CC of Alcohal desolves as a maximum at ord laure one gram of Chloride of aumonia This if 145 of after los of Resul is one per of the ammonia to 100 Reom Evidently 1.250 gram Whitecomes be got in 75% alectal poderbe 1.5 follow Cong Evanyon participes a little wayin

(Note Paraphenylerediamin. The Chloride is solvable in idicabal at many be preferable to Chloride of ammonia

(Mt price Sandweach Resem gum

Chloride catrimonia Notinartini 512 .12 513 12 514 12 21/2 Para 540 24 385 13 All free sceledos -Commencial preobably Very small Orene, good but plales pock marked of looked Very Gad These were on old Cresof Clauks which probably produced the

Cracko -

Lem Kino dues to film-not sticke its frankle brille film- peakably Robuble Enough for 3% del for abachal - Loweth Cityin Bragons Blood, drin up & colice at (220 Fall is dry oling non atiaker of lim act Like Handansel but some what brittle at 175@ 200 whereas Jandanac is tough Leke Contemente Theo Dragow blood is among how que steny ourfree Disalores Leve in celealise It a Little buck for aut was two reep. My Dried fum Thersolvers plicky Kauri Cerphobeen Mynch aumonence film not cleaky after 220 Grain not least slicky " hard court or all doubtful of sol Everyt

Alozo 13@14 Arabec 30 @ 35 Aumonic 30 Euphobeum 20 80 @ 90 Gocuboge 16 @ 35 Guiac Kadaya 16 @ 25 Kund 50 -100@110 Masic Murrh 25 12 Oletan. 28@30 Dandaras 225@ 230 Jeanneon 14@ 22 Senzal Thus 28016 900.@ 1000 45 to 80 couts lb - prof-caples Dragous Blood Elemi Yamboge ofter 220" Dry Ulin felo I think 8% will alesalofe -Deaning Veryllin Lilia fractic ver lettle devicion - Deveral only trade Levalores Glebinium should say would dus to give 3% - It Touth like Elimi. Elemi is quito Sal wal a well night at 200 OR nothing Comes off soft + Tought -

Rea resen 16.6 beer thanal. Sob gras superinted Gy NaOK. Then preceptated by Hel-Lelleried - The act talulin Contain 50,6 grams of what appear to 162 Rovolic and perocating come Resorem anabably the returns vary very much a some have steore order of Revolie 4 Chilo to Extent of 1% or more parecelly this is one of the themps that gives us bracele at 240 for 24 hours on hat place keeps conserved to think low take aliany legand Cold the solid but viscus a is sticky-Tred to Conscius it will 6/4 Cut don't do much

Sandarac Resin almost
Enterety Repainted queale
Colling = precipitation
Colling = precipitation
CKCouling = precipitation
CKCouling = Precipitation
Childreng - Even with
Rock 6 lock

Dowdered Pendarach
Water Water that
Comes true County
proceedly these as
your way to purify
When it reaches a
boil it goes (ogether
but when Pooled and
Comes apart a drive

Very muchy on felter This is good way to also Dandariac devalores in "NaOH. Twens Gracow precipitales of beel bant get blear Delicion, Evenicelle Bone 6 Cale R - Mes num Tom or Cackers feblicance

The Dandarus should be picked by a girl to get chips out Drakably we shall have Ito get mid af the sunce amount of Rexin which Cooks Day decomposes at 212 it the coluction Deskully maker Gulleces Imelled Secudaria Guet et dont well to eccar but frother accorded + I keep of metted for 1/2 hour last stace frathed lead, humand dankish red. Loaler Com Clean + a . Cille Epalement desirge amount of reven order smake Came off think the coele be necessary

to get ind bulbles -Jace also drealing weth Wall, a percept -Olebaumen desolored to Calumlion with Lats 6/4 ordered grows no loubbles of dried all night on gless plate 1" high aver that state, 4 then get in ful on vion steam plake z40° Pout give an Culobon like Sandfras Resin brittle best not very Evittles - pretty great Resembland here 20 yrs Anothew recein cohech u softer -

Deni Welled Jandanic Washed
Then dered a parational human
yellows - 25 pms classified
on 6000 at - painted on beatles
dest set ou girrer pinte on or
Hat place I" hereform still
gives big beabeles 20 (here
precedes don't do to
Openation don't do to
Observe have another place
Organic man hat place I how
Olaw no beabeles

From Truckin Vol 17 429

Dandonac disolved in Alcohal-Then add Alcohalic KOH, This proceplate Gamma Room -

ald 60% alarhok This precipitale. Reta Risin

The Solution Contains alpha

When the precess front and by all of Search from Adaptalus and of Search Style aleast John Back John Lawren Language with KOH Amadown John Scarre Magacuma ram with KOH John or closered in 60% allocated a decomposed by het HOH. Its a different function body

Rutter descriptions

Oet 16/14 Fart disolved by Benzal is about 1/3 perhaps los let us la beautifue Eccar sieven pulls out to thread like finest apreler web foot long Its dol in alachal eccadily The part not devalved is light + infusable right on hat place devalores alwahal - after fecce gets cloudy again Hard to vary which seeven dow the Eccument Fredott is separating 3 Lbs with Pecugal tomafee a They are Corlamity defferment Keams enterely = That kindlord un Bangal gives no but clas whileters - perhaps it well with alcohol on coacount of the water - alcohol

Using 1500 grams of Jandauna powerland of Expreeeling it with Benjal CP & find 1/30 of at is solvable in 1 Benjala gives a very beautofeel (Resen Transport of when warm com be pulled neto liveado as fue as Spedencores 3 Ator more Long - it will melt astery semi viscous on hat plate 240 Falu for days williand changing The Tural w colite pecader I can making a 10 gal run of Variable having both Remost while riched to fun out while riched perduces the good executed - I want to get in of bubbles in Variety aget out the impurity that gives them

Bengil - 10's efund the line from neutraling the He Soy a Rengen Sufforder of him beginine is hard to get hime blee by fetter pecces, by washing Under peckwer 25 LG3 -1 LOE get 25 No water Extra for Each es of phinal ichech a Execution - I have met tried golling out by Deplacement Calum Column 23" Long - 6" " (cled with the pulp 17" water

so Er et, the locter u calore the by turline -Took I have to run them before Chez showed of the Bergen out orall of kining 210 cc - 1 how 2nd Lot usaler Come there Truged blue - 35 minutes 140 cc 300 fraction look 40 neuro 180 cc - VENY EREL Little fraction 110 CC Took Yeng bluz

Dasplacement Expt. glens (Lee . 12" - (Berger 503 10.8 % 29.20 270 ca water 23.40 0.4 0.34 4 Bluz - 60cc 500€ 110 00 5000 9000 of Benzusoz worter Think of 100 of 100 2 1. - Frem of would show presenting all there cores The Day was dere ators) by the / Buy 503-1 4250 His

PERCEN TAGE OCTOBER 1014. .. TESTER . EER. OVEN. -TRANS OTHER TOTHL TOTH RECOR TOTAL TOTAL BLANK COM MARE VARNISH LOT PIRTE HOLES TRINT TESTES KNOCK CROCK INIVEN RHISED 15 5 5 2 60 22 36377 Octobe 262 5. 2 32 12 331 2.05 S 7 5 32 4 663 17. 1070. 661 20 1510 1369 50.3 50.6.15.1. 1584 67.11 19 1071. 663 8. 2 3455 53.18 61. 18 24 31. 2.50 3 155423 19 HO. S. 1618. 1658 40.2 20 1072 665 8. 2 3591. 115. 5 26. 12 41. 1. 73 2 275 x 3316 26 138, 9. 1280 1220 90. 7. 51.4 1422 136 9 22 1072 669 8. 2 3442 11 0 539.15 20 1499 29. 2 GH. U. GI. U. 72 5 38.2 1563. 1 83 2 F 67 2 220 C 3262 1631. GE U 21.1074 667 8 4. 3482 35.1 167. 6. 199. 7. 1028 37 179863 28 2526 111. 4. 259. 9. 166 G 3113 218 7 24 1072 672 8.2 6.440 56.1 23. 103. 1. 53 34 67. W 370 23 121071 1580 67. 45 97.65 56.3 16UU 1700 54 3 23. 1075. 671 8.4. 3582 14.1 14109 72.5 89. 6. 82 6 118 8. 60 4 481 34 92866 29 1583 106. 26 1076, 676 8.6 3HHQ 32 1 176. 5. 32. 1. 4927 275.6 322 7 146 3 154 3 154 3 1194 24 373376 30 5219 135.25 26 1072 674 8.2 10.670 97. 1 3958 161. 4 206 5 115 3 621.15 160 4. 1397.3 \$ 25616 31 27 1075, 677. 8. W. 9.140 UT. 0. 203. 25 115-13 4339,1634 4050 127. 3 257. 64 156 W. 306 9. 167. W. 1251 3 27993 28 1072 680 8. 2 9424 51 1 128 1 114 1.41 0. 334389096 4512 2245 1948 1830 110.6 61 3 35 1 186 10 ug. 2 5550 12756 2 2041 89 4 1072 682 8.2 4239 26.1. 66-1 3 197. 3 4916. 4648 2054. 256 5 5113 1853 3/3 29. 1072 684 8.2 10504 51. 142 235 10 237 2213 105. H. 92. U 150. 7. 143. G. US 2 580° 1/5 2659 1436 27. 903 679.8 5524 15.0.38 711 224, 4. 4804 4732 2725 5028 153 3 9% 30 1072 686 8.2 11457 78.0 74.5 1266 1080 36.3 27. 2 34 3 65 6 22 2 232 2 94678 30 1072 688 8. 2 6476 5. 0 20 - 2 105 7 11- 1-1057 1319 118.4 1487 28 2. 1072 690 8. 2. 12170 10. 58. 12 113.37 118. 37 54. 270154.4 3367 3185 124.3 3. 1072 692 8. 2. 12278 12. 0. 2 0 5317 131. 0 5362 646. 352/1/27 1948 3015 9. 0. 59. 3. 50. 3. 20 1. 258 4 1072 696 8. 2 4385 62.15 53. 1. 57. 2 54 1. 256 2073 58 251 83 4 1990 1/2 159. 6 2439. 2426 803. 42 2 4 1074 697 8. U. 5458 21. 0 50. 1/2 111. 2 42 /2 2244 5234. 2598 1526 7-10 95 4 2705 2576 83.32 29 1. 76 3. 25 1. 352 23 4 136-2 10. 1. 3566. 5550 238.4 91.16 1070.9 %0 5.706 79.13 71- 1-5 1075 699 8.4 100.2 262.4 79.08 128. 1 224.2 84.08 53.5 4 12742 5804 792 5 6. 1075. 701 8 4. 12777 N 13 35.11. 268 8 303 15. 5. 2 09 12. 4 -0 11 33 3/F. 16.2 658 329 11: 274 3312 4.14 22.8 8. 3 9. 3. 91. 33 1836 10-15 0 -6 1075 703 8. 4 674 4 5 2 11.2. 589 295 6. 2 600.1. 0. 7. 2.03 1075. 7048.4.

PERCEN TAGE.

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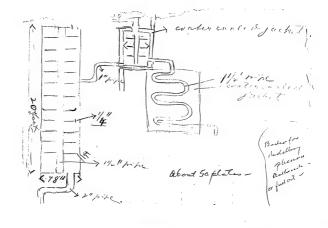
3992 12 Trans 9 of 8 3 February have cross to obtain there is a partial of 12 " 5 ok 3" " special 2 chd presenter as 4 of 12 " 6 ok 6 dia - Apropel 2 chd presenter as 4 of 12 " 6 ok 6 dia - Apropel 2 chd presenter as 4 of 12 " 6 ok 6 dia - Apropel 2 chd presenter as 24 plate 4 Diasa 2 ok 2 2 miles Transf. 1 ok 2 chin all have 6 chafter 7 plate no cross 20 plate ok What tacked 100 to 100 cross 20 plate ok

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538 2 / pana 23 Disc 20 ck 3 Disc (2 cke) 1 pecce)
Very grand trees reclosed - Tree temper
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ges? - 82-6

12%, or 53/50%, 6% Too wench - 3% weeth 2 para w Gest Prechably 2% solve 62 62 better - Even 1% might begins the thing

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Notebook Series - Notebooks by Edison Notebook, N-14-10-10.1

This notebook, which is a continuation of N-14-12-03, contains dated entries from October 1914. All entries are by Edison and pertain to experiments aimed at the rejuvenation or "regeneration" of used storage batteries. Included are the results of tests performed on cells constructed with various regenerated or experimental negative electrode "pockets." There are entries relating to pockets reconstructed with treated iron or formed using different crimping dies, as well as other pockets containing cobalt, cadmium. or small amounts of mercury. Many of the experiments bear the numbers 333E-424E, but not all numbers in the sequence are represented (some missing experiment numbers are detailed in N-12-02-00). Some of the cells produced in these experiments were apparently transferred to the Edison Storage Battery Co. at Silver Lake for continued testing. Their subsequent performance is tabulated in N-14-12-14.2 (see Notebooks by Edison and Other Experimenters -- Storage Battery). Inserted into the book is a report by John V. Miller summarizing the electrical capacity and loading weights of the nickel hydrate and the iron mix manufactured for Edison storage batteries between March 1911 and October 1914. The front cover is labeled "Regeneration No 3." The pages are unnumbered. Approximately 35 pages have been used.

Oct 10/14

Notes carried forward from NO 2

J think old vious from 4 year cells of Sonked 10 hours in 3% 5 of sulphinous claid Couré Geng lister to dry guirekly by Vec to present as to made just as they are resourced from the Call, Hafter dispuss the Call, Hafter dispuss through Uhan all are obey should be roughly to both to be did it of corresponding to with old die to Corregaling & grand grow ald to 2 grand iew du wirgen a was get 1950 - printably y Edge crimp die whad get adad

Oct 10/14

An old Crunged packet with 7 pra 3679 at 35° day fahr only gives 300 to 350 to not contact -Slamous Oxide alone gives considerable Capacity dec book 2

A gave on 420 Run

A gove on 420 Run

But 1113 371

2 packets 8 gram Fe made in B Ott For die cours 2403

from the many tools we will adapt #4 olldie no pressure

Both a+B were run together

on Center of Cup only Edges

Ferroces Ammoura Sect ale vion gave no advantage over over \$2

Resmith with 2 if to cach Michel Plate after recurry 190 hours bot no time schools up to good as Reg Cellis to Al 14 he - It has The peculiarly that it ques senne or even feller capacity at 130° fals as at 15°

Dubinarium type polato # 4 chien 184 posekat which is thicker them used in pleasant lier us secondary 7 965 107 at High rate 12 107

Oct 10/14

333 E #4 Off die schour 11°3 rum goes down after that complime after 1°00 rate of closely the wormal cap ingenous of closely the year of order in year of the containing the containing the afternach Countries aft face well be afternach Countries and advantage afternace last Hormal run 45° 2728° (150%) years 350 rate 2256

334 E 1st pressed with old Comex die Mann Crumped with # 64 4 die Average Mormadon 51rm 2774 at 750 rate 78° 2190

335 & Comp fort 4 die then pressed with flat die die normal rate 280 /100 rate 1/1/2 200

336E \$4 die Then Corrugated un reg Corr die Average last normal 2689

with 20% Tim Elaumour Ox. 100 amprati 201 162 130 Fahr Aquil 359-cheektoff diecello 33-2 rum 196.5 208 360 2005 213.5 361-7ampFe rung cello usung fy Dic Very high, trate good fund out of it was chap or devole

Coldfist. 2 Rag short lube act to Rag Sal but . 4 grand enot call of Kel. 8 14 1526 2533 to 20 386 E 2 Registratticos ecto Registel but of gray NaCh- Call Leut 1720 400

2 shorttiec cells. Reggal 21K2Li - 4 grun LICP. Caldleil 35° Fally 388 Sauce as 385 beet of grown KBy 1880 2080

389 F. Deep 385 Cect 4 gm. Waller 860 Deep 385 Each of your Nasucphate 350 Falls 233

14 Deep 385 Each of grown nitrace has 350 Facho 14 287 2000

393 Cep 345 Cectract 4 ques
Nd=alo K- 3;
ACC from 385 to 393 to run 3
tum 4 Chen ge an caco tal350 Fahr

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Packets Loaded with Coloalt reduced from 400 F 945 745 29 800 840 1000 125 Rf GET VC+ 1/2V 32 770 965 1020-11-7 801-950 1040-1240 765-900 401 pocked loaded with 1/2 Cobact 1/2 From plet 29 4804 420-6 200 ce let V4/2 36 538 720 495-660 400-535

402 E Z Reg B 4
formed eng \$ runs, &of
Curpled & cet 28% Note
11 gran 4,046 Xilon pet in 4 Kun Rog 102,5 102.5 97.7 97.5 95 94.5 -Changed Sof 962 101 95 10:1 57.78.108

1/= 1/2 10 ----

all Cobact rections by HGira it a number A-get eccord

Its but helle shooted by Cold

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also the advisory Course to
get Economy - a lack the various

Sept. But it some for left
Sende Itelle act of 2 the

Williams Expansi

13 265 64 or A44

Also acc of the Cokact fond Hop in

Cadminum reduced by H, 5pm dies que necessées - 9 grams It not es operad as No balt bul botter han Fe - 350 Falls 16 347 353 247 167 19 307149 407-547 253-45 2001327 23 327-345 580-427 133-247 180-240 51 307-360 660-767 404 - Cadnu 9 gm 5 grandies
115 almos 4 fortig 5 Run normal

temp then 3 50 deg

31 |227-287 | 133-253

The State Stransment ...

Cold levels
406 E Cobalt by H. in 72 pocket.
There 30 much noting force () teal
8 767 767

407 E Cobact 64H. How 30 mark 4/6 Hog 8 | 533 | 607 | 408 Coball by Harogen 1040 HgD

409 Colact by H - Hom 100 weed 70 1653 707

410 & Cobsect by H. There 100 mensh 4% dig

411 E Colact by # How 100 wed

412 Cobalt Eyd, then 180 nesh

413 Coloact Egyll, House 150 male 46 they 8 583 533

414 Coball Certh, Moree 150 wash 8 520

415-Cobalt. JVM # 2208 BI-Reduced at 1100 day Oxide no defrom Cosoy Screen Than 30 march no Hg 416 Mil

417 E Pebell Jim + 2208. rudned 1100 deg - Oxide unkerrom COSO4 4% Hg o Horn 30 heech 5 250 250 dhyhrate MIS Nel

419 E Coback JUM = 2208] 1 rudued before good according Oxide from COSO4 true 30 mail 10 lb

420-Cobact - YVW# 2208 D2
Reducted 900 cing Oxide medy-row
CO604 Hours 30 nigeth 5 /0 Ago
5- 225 | 237 | High reco

421 Colatto 90 14 # 2211 A - Self heated around Horn 30 mark no Hg | 1653 | 1467 725

422 Cobalt sporm 2211 B 40/s Ha
5 |475 |400 | Highwate

423 Clearfyrm = 2211C - aclf hetet - liter 50 mesh 10/0 Hg 5 | 325 | 325 | Hegh rate

424 GVM = 2212E Coleact reduced at 1100 5/149 sermed 30 much

(ITEMS(S) FOUND IN BOOK!

EDISON CHEMICAL WORKS

THOMAS A. EDISON, PERSONS N. A. HACHDIAN, VORPERSONS & H. P. MILLER, TREASURE W. H. MIKADOWCKOPT, RECESSED d. V. MILLER, MANAGER

ows (4100) BRANCH BROOM ATH ASSESSED, VIA NEWARK, N. J. M. ATHERES, WELLS VALUE, BLOOM

Moy. 5th/14. SILVER LAKE, N. J.

Hr. Thomas A. Edison, Edison Laboutery, Orango, W. J.

Doar Mr. Beison; -

Emclosed herewith we send you two bluegeinto; -

- (1) Comparison of Electrical Toute of Highel Hydrate,
- (2) Comparison of Blootrical Poots of Iron Lim.

We have made these tabulations of the electrical capacity and loading weights of both Hickel Hydrate and Iron Him for the past three years, and propose to submit you this table from time to time brought up to date, in order that you may have before you the quality of Nickel and Iron which we are making.

We attempted to make these on paper showing brown figures and lines, in place of this regular bluegrint paper, but it does not seem to be very practical, and therefore, we are submitting these bluegrints, and trust same will be satisfactory to you.

Yours sinceroly,

EDISON CHEMICAL WORKS .

JVII/JCR . 2-enc.

[ITEMS(S) FOUND IN BOOK]

COMPARISONS

OADING WEIGHTS ELECTRICAL CAPACITY

IRON MIX NICKEL HYDRATE

								-	-		-						NICKEL		 	 	-
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Notebook Series -- Notebooks by Edison Notebook, N-12-02-00

This undated notebook was probably used by Edison in October 1914. Some of the entires are continuations of experiments in N-14-12-03. Others overlap with work in N-14-10-10.1 or fill in missing experiment numbers from that book. The notes pertain to experiments aimed at the rejuvenation or regeneration" of used storage batteries, included are the results of tests performed on cells constructed with various regenerated components. Some entries involve the use of regenerated negative electrode "pockets," while others relate to regenerated positive electrode "tubes." The experiments bear unmbers from 231 to 403, but not all numbers in the sequence are represented and the entries are not always recorded in numerical order. The front tover is labeled" Data Cell Regeneration Examinents. Important. "The front flyled is inscribed "Regeneration Examinents connection to N-14 10-10.1. The pages are unnumbered. Approximately 55 pages have been used. Acme Co.,

MFG. STATIONERS, 96 JOHN ST. AND 19 PLATT ST. NEW YORK.

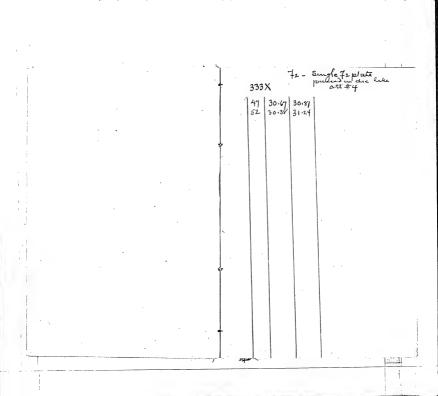
2 A4 Cello-green souted Conc Collhot, dried then Kott, then boaded in Tubes.

Its Capacity - cold 35° normal, high rate dually or het no boller un fact worden thread Regulai - Dzz 1300R#2

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ferrous Ammonia Sulphate lion is no Goller than Reg viow Either at normal or Cold lent

20% Dlannous Ox mixed with Reg 42 with 64 Hg gives very high 72 with 6/6 Ho gives very high Capacity normal - Very poor on Cald gives for for 5 grows of 350 Fahr My (4 gran fo) 3200 WAH -James 3900 MAH+ Dungle tubes Single tubes Tim treely used des place of Fe. Tim tradecast by H 5 yrm Cake 250 730 1050 1165 Curionio -630 275 Needs Expirity 645 140 920 10 255 п 12 60 15 13 155 14 70

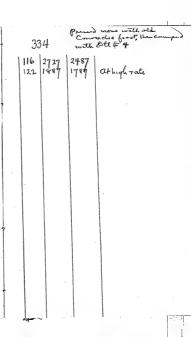


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Notebook Series -- Notebooks by Edison Notebook, N-15-00-00.1

This undated notebook was probably used in late 1914 or in early 1915. All of the entries are by Edison and pertain to the absorption of benzol gas. Included are experiments with various absorbing towers, different arrangements for passing water through the apparatus, varying amounts of gravel in the towers, and different amounts of pressure on the gas entering the towers. The front cover is labeled "Benzol Absorbing Expmts." The pages are unnumbered. Approximately 20 pages have been used.

Colum 43° 5/4 bry Dia 6" With I wel water

We passed water Thru Colum gently got 585cc per minute. with off colorentery lower of 114 ditres per minute. We passed gas 39 ff min + measured water passe Tour to see of leas weater or any interference it was 670. This is wors as gas Escapes tom water

WE now put in a U So gas Cant go Thru water Amust youg Cahemin WE read water po 675 -cc 2meters 680 apparantly the gas helps the water to flow or the water fred is worky faither than at first gas with 1.1/8. Wales Column 38 posesse ques 38 Calcaft

675cc 1.8/gal per tou coal With water re to put gas at 1/4" weater Column of passes ______ 17 cus of 54.5 66"

Deput up a glass Column dia . 2 3/8 moide. lajosely pkd Excelsion -Water passed in 1 min - 950 cc -

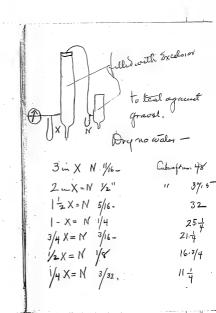
at 3" waln Calcum pour 66
66 Cufic ft & and pen min at 2" 58 Cul off
at 1" 40"
1/2 25.25"
1/4 15 4"

Exectand gravel 25.25 24 Cent is 75 Pale We now fell the 23/4 glass 20 Cent is 68 Falls tube 1/2 fall of 1/2 mich gravel pass 150 cc water 150 CC - Loaler passery gas pression 1/4" water Column 17,5 aug

Doubled amount of gravel 3 mon Wales Calum 64 2

1/2" gravel

Two water Column g took off N opened up freem on X was 2 1/4 wich



I" on X with water running into small column gives @ 3/16 peressuri -150 CC walts pary per munite - while X is [" Dutte whont column of Excelsion using Andine Vialet, it fairly destributes shows preference for glass sedes lect can Lec it way in there are aparts at glass 2" sgr nat cost Which colon with with waln or oil it will be fairly

14 galo men is cold cos want it a sectly offers stream + when it alreles contagnes part or swantes so it would not rise They grows on distributing table

VERY Even its therown cuts was are we now try to pec of Can otas conver

Notebook Series -- Notebooks by Edison Notebook, N-15-03-04

This notebook contains one dated entry from March 1915. All entries are by Edison. At the beginning of the book are two pages of notes on phenol, toluol, aniline, and other organic products. The remaining entries pertain to the manufacture of kinetoscopes, disc and cylinder records, Bates numbering machines, and other Items produced by the Edison Phonograph Works. Included are notes on machinery needed for factory buildings reconstructed after the fire of December 1914, along with plans regarding labor, output, and efficiency measures. Some of the entries deal with the trucking of parts and supplies to the various departments of the Edison Phonograph Works, while others relate to inspections, gauges, and other quality control measures. The pages are unnumbered. Approximately 25 pages have been used.

B Point,
[Reignof 60
John 109
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Bushing's gauged 2 or 3 time a work ou Disc Jigo at Darew Tacks -Arrange all buirs taken off-

Has Schloroscope for herdened work - test unal pièce -

The D'exit Trucker goes with his truck to the Various DEpter Each day to get his parts due his Dept unicar the coastly salchule & returns thereto tes. but with various boxes for not un his Dept. all other Dept. to the orinne HE next gets the peroper amount of unnfel stock from the large 4 sunce In after noon he destribules along the Info moralines the stack for The men on rufg machines made in previous afternoon que un at 12 hoon what they made un ferenvon- 50 acc com 62 uspealed The parts turned in by Chemen are to 62 Entered on their

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2 2 1	250 250 250 125 120 120 120	7 8 10 16 16 Mach 2 = which	take	Mus 21%	of the	Cap	agety

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Regioner 3 girls in ScrewMace

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Screwnach - Where one Machini neckes many points The tools for all the parts their Machine is to make is stored in Cupleand harry to it -Same in all other Dept Done will be in locked 6 oras

> Devise Split Screw guilt tube a hacker for school-

When say truck manfromfathe Dest come for his parts for 200 phono Dioc 80 cy 30 fee or 5 Hundon daily HE has marked Cooper which go with the bruck +strys with it These boyes are porced over the Country an man of porter are brot to weigh machine by a scrup 4 everyhed & partileft over with Scoup secturned to san boxen The Dioc of Cy parts got Every day - 18/12 + Rmeto one twied werk alternale of ours The boxes in such DERT has its Coxes Do Gunched that those going to unother Depart conse Iplaced Concher

Dioc parts Grenden Punch Blacksmith Latte Gear Plating Japan assemble Granding Carlin Dub alixembly SCrew 449 Operation

Use The Two short Extension buildings Battom floor to alora teated Meters

300 moho long 12 mature high 16" to Mater 16 m Row 200 Machines in our rack 11 Rows of rick - 2 weeks output ragum 9 racks - if tilled alterety stores 2200 Disc Material

In addition there will be 300 in that reach we casecully room or come in Cachanet assembly building

The atter short building to otors Cylinder Kineta 1813 or Batter

Board showing pieces of

Scrim Slock on fl

Scien Slock on floor at carre mano several Lays

Assembly room -Racks to hold I days output Cylinder Kilicto 4. Booths With Cabenets to test noise disc Mac Calmeto cohecled in booths with molor in Booths for Cephinder Motor peet in Cobenet, passed in Nocras 4 Rows 50 ft long 3 Motors high 37 Machine in 11 shelf -Total 4444 Machine always use came Cabenets for Dude of Cy-for nous test will regum Say 12 for disc .

Ruis should get me time on assembling By Maca Atto Bale, Various Mache,

Atop purchasing daily of a lot of little Unings - Codify thave a clock list of all Reg route Dehelmle Unings for Dres Cy Telesche Batter With Maximum & Minimum Total to order Buy for yearly went at

Start to and for sample each kind stock used for the 5 muchina - period where for the 5 All Special Stuff keep under Operand shorts mux weth Idealuh Block

Adopt Viewal system in

One extra man Each dept used for sein- + he schould be general all arrown of man Where Man used a lange number jigs bunch them -Cupleard near tools he were

Take the Biz Machine day 100 pouts must 62 detalled on a schedule of 160 a week 30 parts da 1600 parts wanted weekles Day Each man averages 400 part daily or 2200 per wisk -This would take about men -Enchman would have +4 ligo, work 4 hours on Hachedule suduced to 140 Wherehow week working 17 jigs Each would If saledulo reduced to 117 then 15 men Euch with 20 (195 brown dot Ifreduced to 94 Homen would do it Each having 25, 1190 For Each sudualion of 23 hea a week I man can be land affect hopigo devoted among the allen

Eachman has relaced near his tools 2 boxes I has a with supply of a continuin part, The atter Cox dr 1/2 of 60x is Emply he drille say to schedule the regund number & they go un cother 1/2 of 60x Each 60x hald a wrete work - If he to working 22 jigo, he does Clock funder goes to block This plan is to be aloped with By Rineto 4. Muchunst Employed Lioho can set Their acon for Drills & villy use a few drill machinia I for larger production of don't set double but ouly tends 3 or 4 Jugs

Man Nº 1 attend to 16 Drilling 1 Drilling Masker 7 Drille used -

Monday 7 am findo near his machines 20 boxes each divided by a pointmon in the Center,

In one half are 165 parts.

he can do on an average say
500 parts, or 50 parts see hour
33 hours will funded the 165
parts 4-they are put no faat as
dulled with ather half efthe 60x

He then get another jig. Telter Changes the chills in machine he was asong or steeps to another Machine that has the right drills + in 3.3 hours he funder the 3.00 point.

The next 3.3 hours he funded the 300 pourt of has made has 10 hours, Thomsoning he turns these into clock reson

degree on to the next parts 3 Each dlary, until the 16 parts are made from all the 190 +
These are enough for the weeks workIf there are 64 parts it will require 4 men

J 54 it bill attel require 4 men

J 54 it bill attel require 1 from 167 it well
Beakuse to unpassable to 6 delance up - Except 64 increasing the otherwise 4 this is so bas policy
This uncreases will Even up the strong them all the Depts

In the case where the surpril to considerable like the Door + Cylinder the min only hours at the jog of the stock boxes are placed from day or Every other day - no could

Where a man can

Dr. shall have to have many Double gauges to stop use of Meandmeters which are not handled acurallaly along the Screw machines for matchias till the gamper, (high low) 51979 of should be at seed weather that that particular machine makes parts for - The Enequalor as he comes along picks up fruit gauge back and on Another Deep goings is at Anather Dup for same point is in the other Dept of forday What receives this port to paciform) other work on, if it dill goes to another dept to hard work done on it, this 30 dept has a gange, subassembly or final describly have no gange

We should Organiza a Rapour bart dept, + this West have a Buffly of Every Kund and a naw of all part machine we mude In which parter are caccas for One man can attend to it + Keep book in fact a Backeper Can run et + helshould 62 given a small place to store his Whoch This dept should who a good prought - Themen This dept should show Could parak his own streff an see that its ashipped of possibly the coulside travelling Repair men Jahould be under him One boy perhaps to const this man -

May have to do I,

When get casembling table tready to Calemble #30 in Cabinito teach new mon taking aport restling to gether until her time herogot down fine one of subro men to do this work a bright one, fine mechanic who will do as an efficiency man after we start

Davit table in top of office where wooded in or a califf assembly sawling - 6 mgs. I something a taking a paint of 30 Motors till you our get two or 3 good of saw, pick best men

Jet another table or try 3 on By Mach,
Ditto= for up Prett + table
top of affice or take parts
for 20 or 30 Disco machines
+ stout necessary ments put

Extra men for assentling of absent men acen be kept now Job Whop a Took room - or called to facelong acon time this work keep all presidency -

Notebook Series -- Notebooks by Edison Notebook, N-15-09-23

This notebook was used by Edison in September 1915. The entries and in primarily to methods of obtaining additional phenol from 'wastelliquor,' autin, and other byproducts of chemical production. Included are experiments with carbonated solutions, benzol, and naphta. Also included is one page of notes, entitled "Submarine," on the chemical absorption of hydrogen, which probably relates to the evolution of hydrogen gas by the Edison storage batteries used on submarines. The front cover is labeled "Phenol CO2 1915." The pages are unnumbered. Approximately 15 pages have been used.

COz Expent Sept 23 1915

Pressed CO2 from \$2,5044
Limestone them one gal
af Dally Omenohing legal
Reg Lattered, Took qVCubic
feet blanch bench by
funnel - There was
Considerable whete
floating streff Clemying
to bottom of plaaling
Thenal, Fronted the
Plicial weeth 98%
\$2504 deluted
1/2 coad 6 wales by
buck

There was counterable COz grown off so it well benetariani in precentice on a large scale to The net Shend cores gevening 8:4 per 100cc This would give for 1962 gal 1340 Lbs Crucle, Gut not so much of con consesser the bulk of Mexcelphite fellowed out west tran Kare is probably 20% water in the Crede Phanal only net 1072 whereas we

should get 1550 pure -Traded 800 CC of waste Leguer with Bengol, then breaked Tacayor with 33% NOW a necedraly itaget 11 cc phenal this brings total to 360 cc phenol a ou basis 1962 gals gives 1555 lbs phenol-The greation is now How weed water bas this phenol -

I tred solution again with Bengal but very suscel comeant Showed Come off low Chan Icc no doubt of agilaled neave them 5 nem as eve so tim deperating frame we would get it all I also took the waste lequor from 1st brugal negative exect of white 1/2 + 1/2 ach of these m 200 cc/ This shows it well bigilaced in Bengal at the will eight with wall with MaOH, with got all the desolved the Laguer There is some Localt of this 1st gal was fally Carconaled 2nd one is being made

On deathling only got 38 CC free good shound old of Soce 24% of water or 273 net, on 1291 No per fresion 259 lbs low-Theo Low is atter in northeridenating Enough. Or fusion wat Too Low a touseroture, 4.7 Mostigal Benzol. wthis destellation There is a little of much Housedwall black

much showing thema C wants stronger and efter treatment with 1/241/2 m Excer - The Libertalion phowe Some much Ithen sould brew off phenal by Seperating fund & breaked again worth with 1/2+1/2 \$2,504 - The livees out a large quantily of precentile that induce the whole of the shound very mecky I organi The plant couls offer Seperated the offened By acids was quite dock Edennel of Actioned of Fellets Clear 4 Leaves a / collecte addeniant on the fund no muck comparable aurin - puff of dec offered I then treated some of the original Crudo pleaned This neared make about witch Hel Thes Iwas and 80cc - 5 of water 6 of Evennork white Steeps

Man 12504 It does not affer to want to settle out of the Thenal but may do do = Later 36 hours - white which goes Planel Cleare with also, where did of 3 ?? Thenk efter treatment sefophagual lay strong acid hat some acid edft in a chair chair it in stace chould would with a Bruca that was week Phend Lout about grown Combine with like Magnesia K Permalayante Oxide, Lithange = # 1 is opelling feel a @ Manyrenco Distilled Deme of the devin \$2 bucy . Wille from Dulleys 1st described on at colored he 4ct 1200 (6) - at least 331/2 is It's a porter qued abouter Thenaca Cren 62 got off by Little plies breaking with col Aut corpend Na Of Fellowing of Wentralin Jay For Oxide Copper Lillo MOHZ by Coverent a- pour entellermen What is left to puffed sistestandon stuff-may to valuable will have trouble get it out afolice Sperment

Cant get chance from it by hatt ele un la dica lo a must be a Compound which is broken is in destalling growing up its Thenat-I separated the planet + put it mcc glaw in Fee chest to oce if it will Cryptalege inclient 36 hours in ice chest dedut Crystalogy - found lat of sact nate Cchecasio at Gallom of ac glass Jee chest,

The week from big still distilled in vion pat! Ist Trial got 123 cc liquid -2W with 1% Carbonate sada framed taribly only get 100cc liqued a it was madely black The suggestion is bad thicker Chan 131 much Have pout for frach lot, Masons Carbonaling in glass tube, got 370 CC Crucle pland removed 50 cc - this left 320 cc but there was 10 cc mud at bellow so only Added 61 cc of 1/24/2000

this trought out 109cc

of water in addition to the 61cc Waking 17000 clean liquer The phenge was then drawn off afellered - it amounted etter proper holds 11.cc by weight. (Sengoles 300 CC of the liquor trafe which the Phanal do as Iremoved from - this gave 2 cc or 25cc per gallon after 1/2 41/2 want 306cc pergal - 89 % by destelling is perse PhonoG Z72 CP Phenal per gallon by Carbonal

Jook 50 cc of libe Coveconiliain, legnor after Pleureling a pret un Portone grat, Tribromaphenal contains 28% The Tribromaphenal coefficient 1.22 grows - 26% gives 341 Milyrum phenal There is 151400 5000 lots in one fusion - this gives 51627 grows thenal or 113.7 Lbs Lost

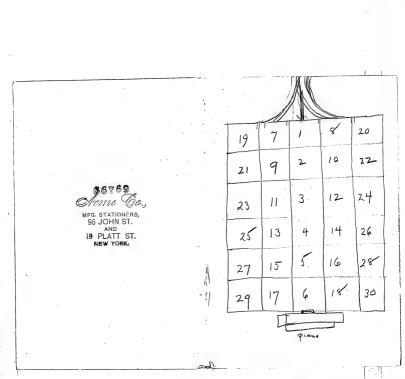
Spent Carbonales Cermor Latter Crudo Bengal Heken off Ofter Rengeling I neutralingen the ackeption, legues + Benzofaled work 2 of Ackal, 41 Tours of tokook by fort Benjoled it algren got no Dhr. Vol - wat a trace, with 21KOH 2 di CHUED no more than my other Experiment to wit Scart Z CC phenol Using 300 de ACRectine Lequer newering with 1/2 It get Evidently Benjal only lake out a ditcle more than 1/2 The Olicul that is in an alkacena leguer Careconated as precionación Olacon 64 Browno tout Must try aller things than Benjal

Andrews test chows 4.5% Dodum Chloride in our Rengantowall of doda Dalvent Naphter scens to the as seros de Bengelfor rampione Pland from Waste legipor 300 Cc tube Combounted dequar gives 2 to 2:25 CC plienal which is a shade Coulter Chan Paccegol 1/241/2 is liable to Torong The sacount Waphla also Sada takes out a

Southern from Salvent Maplifa that 1/24/2 Browns So of we we delant Maplifa it should be work would weith sodie—

Notebook Series -- Notebooks by Edison Notebook, N-15-12-20.2

This notebook was used by Edison during the period December 1915-January 1916 for experiments pertaining to sound recording, Included are notes on the quality and loudness of recordings made with different numbered recorders, various arrangements of equipment and musicians in the recording studio, and different shapes of the recording chamber. One entry contains the notation, "we can control quality by chamber size to a great extent." The experimental recorders referred to in this notebook are described in earlier books by Absalom M. Kennedy, such as N-14-09-21. Many of them are evaluated by Edison and Kennedy in N-15-11-19, which also describes the outfit of the recording studio. Experiments involving the arrangement of the studio include changes in the location of musicians and instruments, the dampening of sound through various methods, the use of different instrumentation, and changes in the instruments. The locations of musicians in some recordings are indicated with reference to a numbered grid on the front flyleaf of the book. The front cover is marked "Edison." The pages are unnumbered. Approximately 70 pages have been used.



Dec 20 1915 Dinging at these. positions to delermine 10×90 and 10 100/4.L Piano In this last \$57 Scraterer Considerates Of the Quality of course. loft is better Chan 6 4-6 The % are only middle or Socles

control see 10-15-10-21 also charing

\$57 Recorder \$ 57 has alranged over Dunday so it is now Acrately on trucking Coherens previously it 10×38 10-65 was swooth bracking Tried Worming whote Record NG Closed CH Chamber no ou sedes as un Center Later - 57 ok au blowing clips too alm

Test on slot of Reano -6" X 24" 100°/ grally 100 3 x 24 70 % 3 × 12 70 Slot like X-Very tille defference

liebe for che Put Cock in Do no scharp Edges This shows that and Its act to from wax & Devifuse is largely due mel back from ball. to air on carlain So Kennedy Days occusions 9 that we must regulate

with . X there is not much Chunch XB defferem in Valuem of Prano pracacty 100% from 100 to 60% without X to 85% with Dummys XC_ Ift framend of chamber of short Top.

DEC 21 1915 Prano only 60% loudness as without, safter -Overwaves walky-in 9X10 Hair Chamber 1 10ft F. Daying saft Ear hear neathing horn hor all agood gracily but weak - Meadium play Can hear faintly well

Ear, fairly land worth horn played VEry Found weak Condensite Record This would be long Enough for a Record of swiface good Derfeer on Blue Centeral Very good delait Eather Even with safeet play 4 horn Trans 10 It away

Inches as Prans of Lounes Avoid dimension of defects Commence to alone I note is anticyled too Loune for me Medium Playing the Mora but not 20 Conspeccious

77 4 57 grad 77 Rofter gruniley - Muchi. Both about Dame loved

57- 100 d 100 anal

old style 70 002 mices 100 d

met cometing

cheps

Doene with alumality 105

Entromathy 105

Entromathy 105

Entromathy 105

Count would

Both, Micas als oly nore mellow a round but something at times comes in wrong! Center al London 57 generally is ballis. but albert have peroferage

quatily allhay to 7 is good

65. 14/12- Jose F Lond 105 andy-110-but tendency of to blub - Kennety says Tightened it - Louis 75 x 3 Vialui Ear - Compound touc dont scents te in Endower Accento Lake one Land pasi Vialin 40

Inother when 3 Victur play antrach without Juns or leader to Very pool but when Lacker Grals times it improver tEnormousely When Each Vi alen makes long note it is elendy generally Cent when all there play came note its Wary auto Volume trave is overgular

When I tack off the top of CARuoin - The coases recordy desappeared - Sotte Thenomenon is due to something of movement ofarmacciour Value When 3 Violem wars used it was farly dong but when Colloquet und Vialund shoved to side it was very much weaker - any

trecession from Center line is vary noticeable in dictation to Vachume Taking of top has apparently not wacked Vallem Much The Cello is weakent 57 Prans - Takening off top how weakened Vac Try Little Lay to 90 gnalely is impressed

The one note which was

Try load o to now normal

a mellow

Jostop these Apensec wary

it looks as if the room

Charles be high a wide—

The violin is the word

wastrument for Volume

Piano the best

If we get Victim weth

Volume all Else is care,

Room Top off 12X12 # 105 001 Mica Coule 50% only found of 5%-The 12X12 is 25% coeases 100 e/s (sem) mellow . best contieni notion Glilled sent 65 125 " Same defect as 66 - natio blutted sent best VEry Mcclose + four greedely but and on verge of

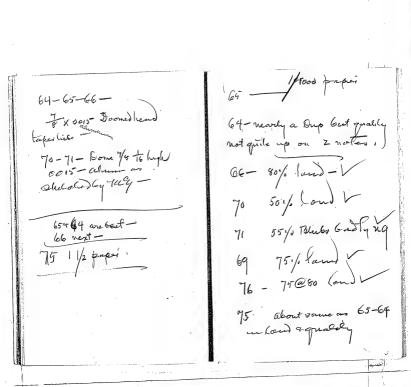
Inotice base is Getter on 57 65 Laparil tues - Dome She than 65 or 66 -at end/aforerW 14/16" 0015 Disc paper 1st part, But 6 are all Kom seems better on 66465 66 - Japanes tule, Domester Notice 65 is on verge at Blubs - 2 few dues noticed 15/16 - 0015 diese parter with 3/4 x to cook underneath € 1/4× 3/2 to 1/2 57- Reg flat head-no I-per to 57, Norz wellow o Shacepai -10%@15% Louder Getter 65 Star parts The Scale on 57 is poor although there were 2 or 3 6 hadis aut Journes on soule unnatural coheren no blute on 65 opportunal = 10 high notas

blaged on high bafors & It would be hand to Gest 65 mm decale -65 = 3 + 5 lt 2 v. oli our Back not much deformen - Val - Vol good, 3/4 of colout will I do Commencedy Violens en Unison -Very pood in fact good aningh with 65 Top of DEn off -Violement in Center Line We get the Wavey

Should Expent on found sterday 2-Vidin among laying together marche landing appearantly over I Violing at they Eastly get my logether with Beats Dextelle Jucia - no munes Execut Piacis - DEW 12X12 Tipe fourtion, pectly four but ill defined at points 2nd trial walking cont Dame as on stage This is Enormously baller

Luceder a for more Oramatie - 25% Wary Loudness tot well to OR us to Low 4 great ly no indeference It sound like Jul Gera- Every Youce is acperated + Mo noise at They Come together with good sengers a 20% mora loud comed pass I

It looks as of = was better then = In all lieve tents there is a dulline due to land Junual or Hay Side but it not lad delimented well still be OR - But Chank 65 is far beller gradule of Loudness to \$ 57ty which is not latered these De 65 hoes These to an unprovement,



65 64 75 all have a blik of chorus — Saldiers Chorus — Olterwise OK — 3 Violus 2 11, 20 a Cello —

Top off room - makes it as low of 64 65 475 not lander all loud but badly blubs 2H from horn notice Saw Took in Vialius -WE now try same Thing Aft away from horn Blue is just as 6 aid -Think must have the top on will put it back on try it The violing don't sound much Getter but Tone as whole much unproced - may be that bad tous close up to dece to Dia working too much on limits -Topput back not so loud bluto just an much Ent

It looks as if Top off will GE to have toff - But top on tome frot so land The 3 Recondors 64-65 75 = have been sheatolod for Francy Set Sunday to how 2 pm Monday to chows they are too acquition having lost part at their streakch a are more Deuxiteum - Friday there was only I on weak blubs a how all blub Gadin

tightened up 75 tho longer blubs on poldeers Chorus - Gat fairly lond- acc vialend but they don't play right - on high Vidio the 2 2nd of Plano -Viden we wave in fact alloquelle too much wave mit - whenther grow long notes, Think they music should be printed on Cloth of wire slands used Coaled with fact noise gangon leffain

bried 55 - Cork couler Obcleved acc ower - 14/16 no alumin -50 law - Danacoles 32 3/12 0015 pages 66 - About same as others in land. Just poper - Lette 65 troopt Japon la cost mutered cos es on 65 Blubs in 2 slaces on Daldiers Chorus 6 Vialino, Piano 4 Collo . Showed now try 002 0025

46477 Bath hove Hobs in with Pollins Charier - 77 has Z not very bad Companion to many actions 75 - Ketiquiened one - of 100 hand then 76 is 110- anni ok -Jack scaper 003 12/16 al center amplified com

17 110/ (oct) - CO3 feet pager 12/16 - Of Ecuter Delandard armid - Ound Ok-

Burkemade 76-77

Viola is a violin with & string left off. + one lower tone string declad off. + one lower tone string declad a violinant Cean play a viole after he hear had presented

a Viola- but must plany one nate Lower nat Easy as he would have to

of Vidin Can Getuned to Ge

noticed that if 2 Vialin player lede Viola musica play one tune & atring refeatly that they can play to queter note lowir he could not use Viala Kuisie mute perfect seithaut 6 gats Wout it one violin is sunt a By bettering 2 1/32 buch righter under & strong it should out at tuno Tyou hear the beats perfect, to law Tooth softens tomaker If all violino are discourded If Rubbal put under all of Violas occitational no change lowers valuenia - acts is necessary in Picero or any other medraments Lake a Mute But all the Violin Music would But wouly to were have to be rewritten for Victa under & Oching -Except whose performer could trampass it calle played Inalice two Violin Each player reperate on say E string Can make Even ralum Ocestained notes

but when they play together The sustained notes are voregularly wavy in Valience a after many experients Counst get them to play Even Valumi - some nates are staredy but most ats 3 per second Wary - at time there are 10 to 15 per second but this don't occur after this is undoubledly due to funger not being in right apat - 9 also

believe the storegular wavy 12 per see is due to the movement of the funger an the throning due to devlarban When they is the usual Vibrating The wavey is Exaggerated. Souther thing neither Violement Coul hear Chiene

Deale Together - & Strong the tight bow makes a little less hoavy than Loose The Conspicuous of the way deminished from E Dering to Gaves - Eu by faithe worst, In double stopping the wary desappears of we have 500 per second proves Geats They do not recent 62 able to white the pitch at all on bath playme water done do de co scopped *

I plays E the other next to it 66 has no surface no wavey - on all others 64 go land come surface but when toth play same Otring wary to harrible Elrong low ser When one plays Octors higher than the other on E string no was all DOZ baker If I Violin blays a note the 2nd fores plays a 3nd or the 3nd violing glays a 5th - There is no 14/16 disc ahum 0015 1ked -Owa piano the Right hours Slaya Chemalady The CE+G Jhu - The 3 eleft The rynuth, bour or as natural tones + are

A Cello 1/2 It from Edge Two Victims - one I put a Horn 75 Reeds Gearcaly any Clamp on & String at a Due big blub wet 1/2 land Contrain point_ The action Violent played without a clamps - The notes were Enough for Rea Enteretty from tram Water Gook olakan allow Motice when double alopper on first trial both strings were not Same loudness + it dealn't 50% Deratchy-Down leke DS Very poor 55 wsengung OK- 2 ft away-When I accept their cellantion to this they bours loath claimings with Expelant strangth them ! #47 - Dia 1" Dia Jappaper it was 6 southful 0015 - al des 5/8 0015 Reg com & Saphers 45 100% loud J 47 256% loud only fair

played by 3 Violins no good no Geats Gut not sweet + ng C+G 2 Vialinis just as bad Even worken no beats - or some trath Viola 2 Violin Playing Cetury report Ok, Michaelen

HEraften 407 1 2 Violing 3rds + 6th 100% decent good - Sweet, 40k -45- 85@90% loud 3/4 dia 001 pp 1 0015 al-Letto 2 Victin 3 + 6th + Deratched 600-1 Viale Octava Lower southly good, 69 - paper 603 -al 7/8 x003 with 3 victing + 300 1 6 1 4 dutto 50% 14 Dia-The alles in uneven Get higher & dille lawar Nect so your butthey many be that it was Paper too Thick abouted by poor play Queends pectly good 45 = Oh for Bull Bass howtore 3ft away -Bass Drui 4ff left, Kunfr out-Think Cup Jumps will weight it -

Tried 2 Violinist- both run scale together, found 5 Notes have Geats.

Ithou put sar piece 4 tage to one violenest sar 9 hald Cup over other violenest sar 9 hald Cup over other violenest violen both run scales or all netes curre perfect no breato The one world Ear piece kept in tone with the other violenest because he heaving the atter means violen doubt doubt or as loud

as his acoul

As Compared to 47-100 Number 46 - is 75% 5/8 Dia - 9/32 alum Quality good 45-3/4 head 0015 prepar 1 x 0015 al Duc -This has been becomed a 10100 - 1" head trag puttern Al desc Det with jig -

The is rather B 1st riolin D 2nd violin 100 47 100 changed again 75%

Rigging up Galler the Telascrices Transcricted I toletone head occavers to 3 riccencet - 1 Cecco Viola: I violent plays fund atte allers person his pital to Otos those 1our second le cett. Whenach whole Orahieline Ohanes Laos meister Vialenest of tempo Conductor LUGARDEN EXPLOPET More scaperly played

Daying one string A Contenuous reace the other victured run down his string nothing sports where it sounded Quest we get this

44- 100% Inhands out to repres 5/8 × 0015 al disc 90 c/o Peny Crucking 103 1024103 100 100% 102 100% Cannot hear any scritch Bad? — deke (his wheel is: All good - But none heaved - 100 blubd then tightened it theel accounts for Garing weaken

with \$ 100 Tried Eng Drum Original WEight 55.7 grams to for which it ded before

but it shafelly sharepen 102 4 103 In precedice this shacor that we can contral The 102 +103 are rafter + more queddy by Chamber nullowbigs to a great Compared to 100 9 103 Extent Sharper by to 92 as Compound Es Ducke Chamber More round & mellow The qualitie aduller by laverel is very striking in Entarguing Mechanile Chamber beat for Prano. bath are pleasing - Yraller like 100

3 Vialinis glas 3rd nate Noudest almost Louble One gave At note Loudal the 8th - The YIT Garing land & the sudden low of Volume is striking, it 3 times weaker One gives yth note the weaker notice none of the Victament pay any allenton to Value of Locus on Estring They bows wonder to a from the Even running

up 6 1916 E Stowing Expends no scoule Wohen they played the same distance Island the bridge the loudant was almost as it should by all allowy the Deale although noticeticce duch con & The note Those occurs to be a break here out all viatino - o One Violin Guarmaries ot us sa to be with preparent aftho hat as of gives a noise sound on man af Che & Elning neckes, both with gut quedalle Things or all musical and who was found in Lacus nater -Walking storm it Except by Goeving Vourace it aprate interest

Ser Beech - For a Long Lune LOE coulant weeks it social well at all - Ithen Locen Wilhelmers VEnsion was use which I contien higher & south a Siele Got the Original in which polo part Ockenby Violin in Lacor Ken wer Weater Vilacenest, This was ascent insprained then found we were too dowlin tours made it quecken this Letas a great terriso Geals charges more about This was another interconnecent there set high nicke Victim near unial of aux Cher Gueseovament Celdo Lwille this unaccost were seen Vialens Alocerino in all lists

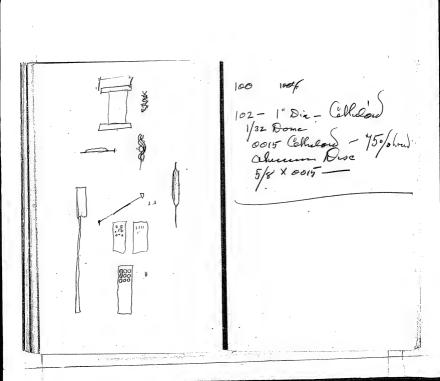
Long sectum notes at End at a part beat Plato I see making Valum Round Wavey - Capitancel the 2 Vialenty to be more Coneful + plan Example, To muster wetrected unpersoned air-Linally suspected that like Z Vickenset down Rato Couldnet play logale Vicelenet This made a Very governt unacoverment forend his Valuence to neuch Covering the high nate Violino, Moved hum acon Theo was the Lince! unprocediment of air Duck was time better than o

moved Salo Violen ne - Moved Salo Make Still feether back The way no uneprocuent 1000/0 116 7 dea 32 dome 90% 1" Dia Coured Come lake Diva Repolai 100 Blubs on sengen. Reg landres but a It may be cup counts coeight = although company warms not loud town to Warm

Possebly - The weight & Electrically of week marghoring weight in this worth certain of the format of the course of the cour Tightened it Laudner 45% no blues - accent but low Volume too much tidicine A Go much

115 - 96% 7/8-\$2 50ma - 0015 inequired 2x 6015 al place Danno cos 115 -- Same and 115 95%

118-119= 120 ed desc 7/6 x 0015.



Sextetette Juaia 101 Spearse 1st test -. arranged Regular Blubs a little, rather Eugogalde Spokraus tos loud - don't hear 2nd test. · 101 Reds axvanged - Uneson Barilone Queille Cleaner & more enjoyable than 1st - Sophrano shat quite so low but stice tad four Don't hear cette 10 Keer med - Unison Boulone ourtled Tenor omitted where my coetaver with Coloraly Just as much no se as in 195 last not so any andle as Ix lest not so down

4th test 101 Reds 100 100 Revorting one Boutone into a havenous point, Superana tro low on product - Boutone Too land - Net very Engagette Door Swing to lience 100 101 Cellula 103 102-3-4 Exacely same as 101 Except Celluloed decephin in place of skelling paper I" head 32 doma-Cellular 0015 Descal 5/8 × 0015 | aper arm 008 Raph

Personal Equation Mkohnk 6.5 7.75 Teags 6.75 7.75 Hayes 7.25 825 Dawson 8 7.5 825 Dayon 9 2.5 Angrund 9.75 9 Applegate 10.5 10.75 Stricket 10.5 10.75 Walsh 10.75 Shorder 11.5 Soldway 12.5 Soldway 12.75	Spring Recentiful Opining Map - of position 1st Victin Z 1st " 10 2 " 9 Cells " 14 Pretty good High Victin Nitrolo too which in places - also scrapy on Z of many - opening Con victins on 2 beats between the Z 1st Victins -
Renoan — 10-75	

100 — 100%

118

119

3/4 Dea Celluloid Den

120

7/16 × 0015

116

75./6

119

60/6

120

75./5

Notebook Series -- Notebooks by Edison Notebook, N-16-04-01

This notebook was used during April 1916 at Edison's winter home in Fort Myers, Florida. All of the entries are by Edison and pertain to the manufacture of disc records. Included are descriptions of experiments to be performed at the West Orange laboratory and speculation regarding the source of defects in the records being produced, as well as details of the experiments performed in Florida. Many of the experiments planned and recorded in this notebook relate to the coating of disc record blanks with Condensite varnish. Included are notes on the composition and consistency of the experimental varnishes, along with descriptions of annealing tests performed on the records, experiments to stop "creeping" of the varnish, and methods of applying the varnish evenly. Also included are drawings of machinery intended to apply the varnish evenly, a list of resins tested for solubility in alcohol, and the notation that "We use too much 6/4" (hexamethylene tetramine). The notes indicate that Sherwood T. (Sam) Moore assisted Edison. The front cover is labeled "Disc." The pages are unnumbered. Approximately 60 pages have been used.

Fort Myers april 1 Downed on small disc, & regular Var Containing 100 Resin 155 alcohol with 1/6 Vandrac as compared to resin content + the regular amount of negrouin -Whether thick or thin the plates were Even tohowed no Trace of wrinkles In durying there was no Creeping The Various sent down by Haffman is free of Pavia or 6/4 In using it to get rag varinish to Each 265 grams of Var cidl I gram of Pour a try grams of 6/4 This makes it standows Vocumen —

Export for North
Use Thermoneter on presso
Fransfer 1412 low rim reg Ver

reg achectule BUT remove pressure

to 100 Us when cooling time connes

t then Cut off steam when it

viewches 180 remove pressure a

take out bransfers truthing we

look till Cold - Shew print +

test for Crowdis wong read way

for landler 12 as a abreak

Weent to see if Contraction not

under pressure to an uniprovenent

North try animber of Scheduler

1914-blank loco right to fundathe

North free anumber of schooleds for the lowest number of unates he final Curing law to dong in I have free elelease. This well help out print.

Theory = WE use too much 6/4 - making Condendte too Gritte after large amount of high temp Curing in pring Huz use less 6/4 there is bad free Selsace, burds + pull outs 2t is very desirable that the final second should have a hom cut To abulate the poor release we Can use plat or low rim plates that helps some 2nd how rum plates amoother perhaps nickel plated-3rd Add More Dandrac his may make it more brittle than't does good, 4th Chill down by Yee Gox to get free suleave, 5 - perhaps something decomposelle wrng gas around 300" well Imake free Jeleane

6 = pacerble Och Ben Then Varioush may do_ ditt. Sesame if it can be get in Var it being wealin idlach alof Adouble layer on plate, 1st layer a very thin coat with Reg 6/4 or perhaps higher T Conserved at 170 or leave Over this Power 6/4 Van, to cut

flow thinest passible Coat Varmuch or il univen lacquer Varmuch on. bring up in aven so it just goes mubbery Remove - break bubble Then flow or lacquer again Condense of break but bles Then fucially flow - + full Condense, This Ochema gives quant flexibility will stop bubbles gives even It is possible that it is not Try both ways

Expunt Flow & small plates seq Varbring up just to Rubbery state.
then Cool & soak 4 in alsohal
of 4 m water to sumore
64 of Para Ete, Then
put back and run seq
ochedict to see of 8/4is
seally sumoved -

Yournesh plates sing var Egnel to Say 10 cc Hondana rections then flow over Chellan Var dry & Transfer or Victor My ruly four or was got of Vic ney between plate of Blank

Sput a saleiralad Bengal Sol Cottleming 140° MP Parafile average petere at 14" peters dried of hen flowed with things no 6/4 no para Ver deleted - if under run the Parafine felm - Dont Ment this is preactioable

Apr 1 1916 -Just tried good Expent - but 4 of old. 3 yr old succords which all Crack Gasty of point of Kings be stick in around it into a closed Can with aloohal lacup under Theomorester under Run air uside up to 180° John Men accessed Cool till 85° Normall Edge Mo Cracks develop by straking Knifz point

all over on both sides not a single Creek deorloped -Thu Exportment shows over Jusords chould be annealed before testing & Shypping After counciling tested them focund olight offect, one or Z had lead run out due to annealing but the Experience

was very erude the Gottom cel the record too hat, a uneverlain no craulation -Will rig up to do it Getter

j

Remark the Funds from Moulds at 160@ 180 a feet in Closed Good to Cook grandwolley to these of innecessary to anneal in a formacle

dpul 1-16

Indice when I flow the Reg Var no poura or 64 it don't creep, the wrinkles no waves trying but when I dilute a little with about it creeps felves or has cell the bad percoparties of

Univer places I towalcohol as we already know is a good king of believe we should use I forced by the Grand will disable the Grand Velecohol out the Grand out of the Grand out of the Grand out of the Grand will also be to also rapid wallenger of alcohol and wallenger wallenger at maples

January acr Evaporting room needs Conditioning to have a dry atmosphere

Var without Para or 265 grams Var add I para a 79 grams 6/4 - This Waker Reg Var 66.2 grms 1.975 6/4 250 mily Para 33-1 987 mila 6/4 125 " | Pana

Apl 2/16 Starled with 6 Records all tested for surfree 21 sent 1110 am 780 1210 1237 1245 1.15-TEsted Records (Z for surface, no change Knys pour gens Cracks /3 of . Cercumforment - + Offorton to sides du one This temp too low

here were in 1st Exet With 5 Recordin 1 of which Cracked itself - it comes one of the 2 9 took out to lost perdase. done in handling as I but Vicen together a they recorded Started At 450 pm letup 520 535 Shut of Cheat at 165 to Cool down - Thes time had begging account upper Dection to slowed Cool

Apl 2/16 Exporement to stop Crespung Ofter powering about 1/2 portion Reg Var oh Each plate, a scum formed lake land the from Edges num Some Amy Alcohal WG out room surface 1/2 the area still tright - wife worked a To this added Camphor nG then more Camphan nG from near it but it does not Crasp Made bresh Lot Van Rag + to 13311 Var added 250 Wild Think 350 Mily may works with Reg allachted Stearic acid -Thus aids the Creeping Very much Hearis acid or Sleavene It all disabord - the surface of disc on dull in few spots from preceptalism No good - Deum forms of Stearie It werent more preories brigger horrisk I will add 250 mily more Strain to ace if Canget dull swife or The well or 5% Stewnie I find that the creeping is u Ovan eformously increased the succeller the amount of varnish used per plate. 500 Mily wo too much ottachal on Van wife not Carry that much Oteanie was frothy a full bubbles caddes little alcahal all because

lettle but not much -Sheets Ecculy raced Pike pie Crust -The Comphas any al sheat is not alicky with least Plain steams is alightly but peraleately when deriver will Time pawders could be raceed in this daugh -Made a baldh of Varnish with Joa Hely Stevenine thesis more sol than Steame Get has to add a little Extra alcohol. it och like Steams + about as good - The tree build avail Juntares fruit Messenes but 1/8 portion weeks of

leg Var with only stewned are does the same thing - perhaps the Compliand dies a

added to Reg Vove some Amyl alcohal then added Done Camphon - These addition not working I added a lat of Iteams deid which all Gedent disalos Mere was Queau laft in it. Lohen 9 poured the Vainnel a soum Longo aver surface probable pedeceptation of steen is evend. as this dried very slowly & put dusc on laplas water tocket oven till it got shiff temp about (150@160 I scraped variant off with Kings to a dough it was lengtion quantities leant sticky - Rolled it out with a Thin object + it dedut adhere - it act like guille sercha Could Eccale Rollsheat atthis - Condense Them) -

tested the 5 Records for Ourface - In 5 faces no change ourface, others had we Considerably - Wherever there was a Rd at 18 it maran Very much -The Volume of sound Record or this of did on BOTH Sides ahowing I neon was cured prapirly Altorilla I look as of with can Evenly se at Say 165 + Cool se there will be no crocks None Priviloged oullas Lo faces with Kn

3rd Annealing Test-5 Records - previously tested with hand to Ear 4 Succorded - Will run up to 1800 fahr.

Closed up to cool off -

2 45

170 176

180

Warrondy peet 18 Reg Von plale un water gethe brought blanm up to 1800 - They conditioned I was going to put unaller flow Jover them But Treed att 60 needake washed Them -I noticed 8/10 of discs had no decklass - Chem it be Revision decklas Strong by made first & seawourd a week before use water Pouna + 6/4. 1st Condensation -On 12 noon 108 118 146 156 Cooled down out at

Flowed 18 small plates with Regrobation Containing 4% of Retains as Had To allel a little alcohol,

I note that when 1/2 proper amount of Yourish it is Lower in Cules than 2dges - it Tends to run to 2dges but don't fry or

break like sug

I fear it is not what we want although they every up on 1/2 hour after forming - not perfectly ever but fairly ste - It will depend on the double or last pour

9 pawed 2 or 3 heavy -

I water 50 him after that they are getting Very Even only 3 or 4 not evened up good

Put in oven - There were deali but generally they esser guile Even - The z thick one had This formation or surface -

Creeping Expunts The regults of Schedul on back page nearly Every one full of DOI @ 002 Gusble - But on Z Uhin power no bubbo - on the I think power, one was af bubble almost a froth or 2 or 3 4" bubble rieceeds from it rapidly OTE This ahows that double pours & proper Var powed - gasalone Cowa schedule bubbles Even in This is perfect NOTE Vary BAD Varinish well by having otcario a in it -This works fair -

Reg Vai - Drap water ou lop ng Var elight druper of creeping - drupe Alashal Cause an almost 6 force opota crisps very much Var

dry slaw - vouldenant film Var touched wealth gasalone

Dise Cooled with ganden Contains Decomic allied, the

menthal in alashal drop outcowed plate Chlorofu power ou plate their 1/2 of 3/4 of area with Var Reg flower balance of Varnesh Ether mixed with Van MG Very Lad-Otter a brief fry which is rapidly over with decemple Chlorafu maxed with Var July Mour building state settle surfeelly Even There is precedely the best Japan wox in Var no solution of a single Stearing I grant to & part Stops creep by forming asum but all night disent drug alsolul pour out, This acum is nig -The best way on bug disk would be to flow 3" about. Garafung Edges of disc ng then spread to 5" with piece metal o dry I hour -Unuk 10 to 15cc is Enough Att & Howevou then flow after I house flows Center of Disc /2 5/5 die flow the way laskets 175 Then spot flow dry of

Freeking Coulder
Type friend Reg Saladeda

(aske = The only doubt is
Weltte 2nd Coat Variable Year with the fine bester for the Warming to Hour ackeddle
Freeking Coulder is
Weltte 2nd Coat Variable from the bester for the Warming to Hour ackeddle
But went 100
Will not lay about

9 plater, with light apot flow dried wall then a 1/2 flow outling - after boken to (80, found 2 or 3 6ubsee) on all fine - only few open on the 9 on 3 large bullo -Broke altthe bubble open of will spot flow-Then the other /2 flow 4 funal bake to 200 + Mento 235

Notes Jelm Even on flect plates alcomendation bottom af greatest Evaporation

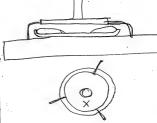
This is true no maller what

When the alsohol has reached a certain character of Evaporation the

Jage of the control of conday good Controllions but generally the Center

get too Thin + it does not flatten perfeally

heaving a hole of I '/ highness welcomes



Evaporation only at Edges

give a permanent hole in

Renter Sudle Dia to X

4 1/16 from surface of Var

gives low place 5/4 dia

Resurs Dohnable in on the other hand Alcohol Ifmade thus Zanzibar Seed - Dischow Goo Kino -Kay daya Sprince This gives a raise Amber Congo Capal "Bath, to Elastic mass-probably some disclusion Amber Congo Copal Raised Jacamaha Jum - Disoluso good but will have to be fellows full dort Droder Venglittle Jum Catachu Very Doluable, Aceroides qua Rand partabout 7/8 dia jutaling powder, disolves some Indian gum - not sol 1/2 agr in 16/8 - 47/8 is 49 Light Estergum Very Very Dol or 3 times the area

Jum Euphorbrum Doublful, Myrrh a Lette Kauri # 1 Balls Logether Ammoniacum Tears poor Yum Denegal 12000 [Guarac, Dis considerable must be fullers GEdda Karuya Doubtful. galbanium Wass pool (Locust Trazque Quite Sol Mastic- Balls Dingapore Danmar Doubtful Batavia Dammer

The law is that the varioush three com the most at the greatest point of Evaporation + will draw it away from point of small Evaporation With an Open plate the mer afwhich is flown acrow it wone derection The Varmuele will be thick of X or them at Z because wind gets more salwale will alechal bes it passes across the clother Evaporation is The only way to get was teven this will have to be

Experimental with to get it even a rotating our pipe would be the

Thenk the exect 60 occupled Ou high humidaly days late as water Local 6d condensed 6 the rapid Evaporation of Che of Callal to prevent this The air must be healed al ghll by Rawing over sleam

The Varinch cresps to the exact asy afthe licke lotth a hole 7½" clin-.

It coas this shape 2½ hours a the order Edge was subserved this of varind —

To hile obeying the high part x was stry mattled to while it evently got amount to well not by treenees.

That there outer rim should not be Thecher them etter part all that is recommend us to please of them were of the same of the part all that is recommend us to please of them were of the same of

The experiments with the courter hope for prevent challow Centers of to province an Even flowed plate which was a succeed with the 1 % plate is a feelieve with a Key size

Varmind plate

4-11-16

Fried to stop
fried t

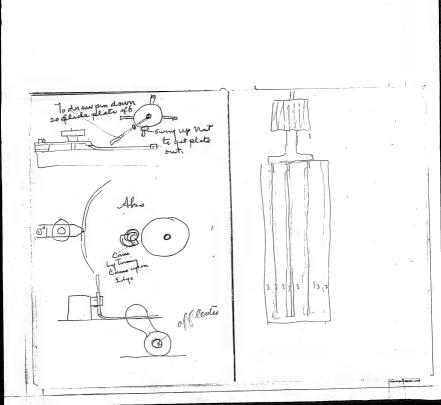
Countly of Moore fund that Red Centers debappeared when new alcohal was used witerd. alachal used in the flowing Then water on Vac duyer don't Come out The brichon weress the blank don't agreesh down so the Center af Varmel pounts - as the Center is always low-The oremedy is to make an Even flow plate by the of Second raise the standar of our alcohol by using highly pensitions beaut

40000 places - 95% Center ok plates, 90% Transf 90% In the case of making a Regum 333 flat blank flowing Stands Denhages 3 apoto ou slead disk would do it graphs our Hold down Edges of Coulans & blow Var till set this will Careful Exammation of nucha thickness Even Event plate is warpend Rubber plunger should Gr made right along Also the turning off tool & platter -

The blind has water in 4 this disalves certain salts it may be blowing lowar air litro feres of theoristims 0-0-0-00 may elemenate the water + precipitale the falto this will glemento the Salts willout the necessily atreama ar If this don't work of to, al ackreline Combination with the phenal then Hel gas wight do ag he worded nut likely to Combine with the shend - but bettel might altack The Still pipes more con them wer brakup Combinaling Imaga B. Carbonito

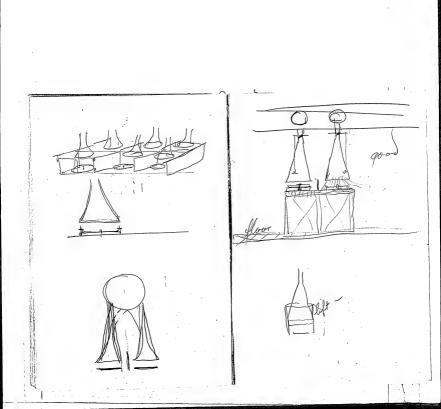
What makes tree trelease WI can always correct some or the decomposition at 125 lbs pressure. 330 Falor of Unaveness of Veneer by varying the Shellad in powder + Something withe Varnich with a blown slate wellout Clamping it fellet sorra dae will have to low ward than when it is clamped from plater of this substances Vis demindres of wice tend to demunch the town releases -Also of the feness of the Its brabably something in the Dandras that makes this Ishellad must be used as Tends to make it drys gas = Also another them that + Cank with makes for feree relange in to leas plastic & not a low dim plate or no run lake Care of uncommen of the at all. plate venedifrankers that would slick Also of Alsohal is low body ou high run places wouldn't stick at sell on proof more shellow much I be when as more water a flat selate will by left in powder + this acting on Lac makes more puration of los plastic DENts & Buckles must be got out of plates -

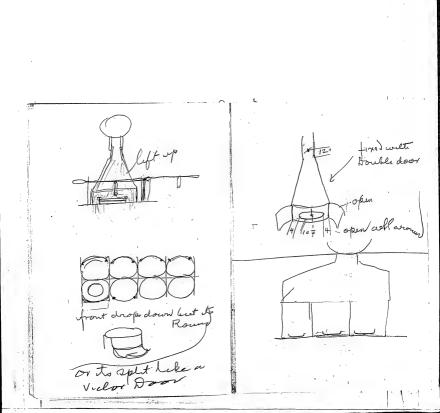
De about plant for 100 lbs darly para cenudo phense— Kcl. lamping down plates Essential as they look



get a more sensitive level I than spirit heart Use our waste Myrbine alerd to make Parntrophenal —

Test all the great mow put away for time lest -Ale that all the builton in Mould are thin so they do not take the pressure off Coulins. I found on last Company Gat 100 Records from 2 two high Buldwin Tuake Knife tests -See How plates come out with files press Hale -Maore said he would Varnish have them fexed -Tall Warre, Herd Investigate of they are Baldwin pass not now making finer terro Line Cracks flow for same Shelling





Possibly if we make double flow must use floor 3 also may have to kut the Chamber heading Coil on 5 th floor of Nehr has norm or 3rd floor + 6 law up to 4 th as wall as 3 floor or 2 legs I rack side

Jondanse Andine View Calleper Varnush. with Hel desalus out plates prea cemline - they can add phenol- Anden See frounding on Ohecker This perocean plate halder & balos gives definite phenal & on plates are all (Known Resim-The same & of they fut -Vac awar long Expet taking out transfer Dee of press platters at highest lamps Blank Franker + front Callegor Crucks ser fout Some Wickness allower - They puff up are flat but may nut Callips same

(Lee Waller Willer -When plates are blown & Even galey-Crowkite, whis go for the ovens, V. Recording Mean Uneven heats of Contousation Chow last 15 Rejectal siceords Try the Double flow 4 lese Kalleen W Alfri-bake, then of fex tonce for all Greak Bushles & Reflow of say think he beller Afrial bake go back to old Ofund Ste While Expends a gelting ready for blooding 17 1/3 the morn lack to peop Red Centers so we Cum go alras

hand it may be an advantage like The paddles up Record mould Dee about Thermounters See of Correct by use perhaps the causal way to put blowing pipes up is their Stop using new alcohol of make deep Expunt 1 pieces 10" cohole Exactly as 9 made to see what change take out at 125 point Transfer See yang part of Edge of blank is on the curve As Munk we should Edge Them sweall so thes Clent oracer, on the allest

Can make casting

Notebook Series -- Notebooks by Edison Notebook, N-16-11-06.1

This notebook was used by Edison during the period November-December 1916. The first entry, entitled "Dinwiddie Expt." lists twelve organic compounds with the notation "Sulfonate Calcium." Additional entries at the beginning of the book pertain to lamp black and other ingredients used in discrected manufacture and to problems with the use of lamp black in record blanks. Several groups of entries in the middle of the book relate to a series of chemical syntheses and separation experiments involving amino phenol, zinc, and "myrbane" (oil of mirbane, or nitrobenzene, used in the manufacture of anilines for textile dyeing.) Inserted into the book is a note by chemist Richard G. Berger, which contains instructions for the preparation of "brown P-Amino Phenol of Permanent Color from Black Product" and a chemical equation expressing one of the reactions involved. The front cover is labeled "Disc Record Dinwiddie Expts. 1916." The pages are unnumbered. Approximately 25 pages have been used.

now 6th 1916 -Dinwiddie Exputs No 1 Methyl Benzyl and line Sulphonate of Calcum 2 Mono Ethylandine Dulfonate Calcum 3 Ortho Nitro anisol @ Diethylandin Dulfonato Ca 5 Para Xylene Sulfonato Ca

Orthochloroundine Julfonate Can Monoethyl-O-Chloro Toludin Dulfonate Ca. Mono Ethyl- para Toludin Monochlorohydrin Luctorate la Deceforate Ca

11 = Anisol Sulfonate Ca

12 = Thenetal Dulfonate Ca

We prest forcew Coke positions in our Lecture Black 2% at the leave of the chart with the or it is a fine our force of the chart of the position of the leave of the country of the country of the leave
nav 25/16 Cohe Dice las secot frances with the Lampbook clothing our gruder toheat is a Rosed beent preceden Have tried deficalleling, Lbluck wont go into lantor wellow considerate bealing of eterring LB goes into acid lake 41.00 Laffite, Enery dB goes into alachal also Charlene & Kerosene Fre LB Oxidias Fy KBickramate + H, SOU GOE Cet deut Is SCICC Growing & Even reflex Loweling wedle Dries in a hard lumpy Condition afterward, hasto getulo dicarac-

Oxidescina Cy KChiCorate + Hel flelite is the first unstruce to love the collect oud Black is profound it deflocielates il so midel that its almost collect -Run Thogu felter & Chen Letter Chake up & Alachel Searcely get Three & Chen alcolial is fuce at single Line procies_ Doutece hoes can wantant the Need- it done on felow taker Enlinely deffering from the actions On a coace a glass the Unen Joseper oct & B. by brokermical light es Red brown & brackers anest We are rigging up at

burn oil & make LB & craps

aro blacom Med B

No 2 von ok severely a organ of coke got -Now using it Made a small 2 1 x 5 high neixed with of arms of Springs 12 Long reaching west of bent round to sides to which + break up clots of Lumpblack in dieg Van works fairly quad 12 hours only face spear ratical Think this care to made to Will now try + subschule Kindghur for Law Elack & Dechow of Covers on

blank - Could dye with beginning

11/26-16-Today used sig blank Condercreta Var Var a Collulow Such markan blanks dreg wary looks good, well pecent & test Dre 24/16 Welted Oheking + added Caster Oil - It don't blend ng Welled Rosing- 2020 Castor Oil -Blends OK

ad except trace unknown Benzal Quite Dol Acctono Chille out cohite, but Zinc May 62 DomeCon but very lille -Thenk this also very good-Iwepenten nG while -Ellier - trace - Tolking Chills out

Gatsome accolic dachayde

It the due total has severely

So for only practical one are delone of Renzacolcheydes -

Hydrochlords

Sectione desolves it my great amounts turn seed Court chill and even a Concentrated sol Sly Combinio - Alaskel Court chell out, him red -Nerosen Jassacone Salvent

Newton Benefic Schred Neghter Bengel bessefran Carlon letrobehorde -Nove Desalves any

1 Bout durators much ;

Come och working the home

450 am/ 1/9/16 done Slavited at 450 30% Hack.

Section of the sandward

Benzadine -No 1 Upright, double padde atarled 750 am - done 450 pm took 5 hours to put zine in, 30 nume after Time all in added 20 cc walni Hook of hours to make the run toaled put at times by had water when beton get pat cald NO 2 operated the vance laught of time - Thes is horogonal pof flot wither case Hote of water was added - They pot con unaction or when post before put water in got thick quenchy of the Ouglastice slapped up dedut have then translate well NOI Double peoldla meaden The yield of Goth was 54%

attled Keorelical - but 1701 yours a high control 200 Exhaus pladuat tolerous 102 gaves Red ago The Ohan that to I is best apparault decring recording in toward in the Second was the Character of the Employ operated to see how long a plat much be used

The formula wiketh pals

was

10 grun Mirkeur 6 lec Alachal 25 grun Zine drest 30 cc eff a 30% Nach Rol

I have so a very great commit of 200 termed wheat close not the sooks of the makes it very defficient to fuller in UE ment to pulser in UE ment to fuller or could have

troceco after fillening cut Everything Mis 2nd didn't cepters to desolve in Mack 30% or 20% Even warm

Another tracelle is that
in them Warm backing
Alachal to exhicit the
alachal gets coaled in
following to preacherely
in parket coals
out,

In working by deference of collection the modern of appearance in medit to above the booking point of the light of

Those some the latter Zue left-perobally 20@22 gruwould have done -

If all could have learn got we should pleakably before , get book yield at Charelianl

WE only used 30 cc of 30% nach coloners it seegues for 25 grus Luc to form Zincato, 102 gram of 30% NaOH, NOI Uprifet per Decile occoolie -Depth - 4 wales with 10 mylen 6 cc Weshal 40 cc center. it made a depth of

23/4 leaving 1'5/4 clear

Jose NaO & 30 /0 4 20 co comen Jhas dose used for necessary had therefore 80cc more than 14 Rund their coice show of foreneury well luke place a it coice alaut this Chrospe Run Z KOZ move Zno beet not very much mary (levento) 10 grues keyrlean Didn't feller as well -NOI is preferable 25 11 Zine é ce alcohal 90 cc 30 % nasal. (cla NO) 5.450 + 590 for Marchal Ho co water offer all Indu allocomplor 3/ bad nigram 84.15% yeld Miele 10 2 5695-495 for al. NO 2 Rot same Except and x but in xoz themk LECCOL Zina is inbocc of 30% nadd, The remaining about a being Evap which will give stell vectors; Use hat water bath Cases WE min 1/2 hour after last Zine is in bafore petering in to keep coarm as Zenc water develous 84.15 % yield from The no I bot worked of Double Cherrer part, abforme from the Horozonto Zuic prec a ZnO pres ounce fellowed fine well have

no traceto weeth the

3rd Run KOl Pat!

10 grun Neyrkan

18 " Zinc

75 cc 30% Nacoth

6 cc Alechae

To be run hotter these bafana, I have put in ever cause period 5 hours - talul q hours 30 cc water to be put in alter all then a vin-

NO2 Pat same Except _

god Reen is & K got 6870 (Chete for 498 light sied 97/6 peers myrbone a lost slight amount on woorking a personole whe Mast Habeleon This figure out beller Chan 90% The occasion of his affice come is deep to feet their I kept the temp are well I for I book the whole time - I put with water 1/2 hour after time your all in -

We will now now for info

10 parts by weight Myrkans. 18 " Zinc about 75 ac of 30% Nacrt 6 se demand.

9 Hour run - 5 hours to put Zuc in 5×26 hours before 30 cc water put in - Kcop lone principles 140° Facher Mico amplit run

Anudophenal The Red Solution from acting on base begkel a readming by Tu as far de pascesoce es alece Red but leght -Thaking in ocheraction funnel ausolone Benzal Carlow Elicach na Anyl dealest takes it out + Auly " become deckly Colorad believe most can 62 dot cut their cony of lawser It light yellow wherehouse by o dome Cherry els Clorofam ng-Benjaldchapte - Wg- acts out Acetale Anyl Experses bed not near as guird as cemeptal Turpenlin Ng Thenal - good -

Parahelos Xylol work, pecetty Dichlanohopmin nog Ortho Nelroams I) kg acts on it Welley banzandini. I sig acts Sypnon Detler thea July -Och Dassefres Ng Camphor Gel Mg Irobuty/xylol Ng Eureal fairs down but dont de Och Luxuder Ketone Solvent NOZ desalu ocat black lacet Colons Dol probably impure weedeque - Redeved -

Retone Delverd N° 2 from Rewark Man is desilents by Held delette I have when it with some water of Corne till texperided it by fund so as to distill it I destilled some yet white but no was the ther danken it

Phenol from bellethen hypnon but difficult accets out alone - head samper to and it least to the

I where well bound Elevale forst for my reflect Clocken well the prior I become almost white but not more than the wal-buyed Er kently Z delbalance we Big Tank - for every of wish 500 cc -

12 makes gave 24000,

100 CC Myrbana Les Ecglis

3 grus Zino diest to 1 ca

30 cc water

10 grave Negretario 873 CC 75 CC 30% Soula 95 CC 6 CC Alachee 6 CC 18 proso Zono duet 6 CC

1 unit 125.33 CC Jank mulliply 192 times

Forther Pat. Myx6aue dochal 1152 30% 2 Jacker Zinc decot, Put 143 grows of Zine in every 15 minutes, this well looks 5 hours, water all Zine in ordal 5760 cc Water of run & hocer ucors allogether of hours -Works P.R. now red atueff -Pot a proportions approvedly Ok - am testing for yield loce plato Zino and

On account of 21% attacking the paper on fucer ales clath We used to sheet asterlas stilling aloth over holes al 6" fector of them detector sheet the coorlings weak febrato stand Vaca but clatte Hexen it OR WE letter out 95% afte Strong coliclion kockacil deluling it = Theopolection was wice slotle wil The Zine on 300 Tuckle dust by high dansel? 4 slow mound cohoal author or sarapa They cook ok on uneacl Lokect -

[ITEMS(S) FOUND IN BOOK]

Proporation of brown q-amino Phenol of Permanent Color from Black Product.

Disable black of amids gland in cont HCl and boil. Decent of the clear solution and obtain the crude hypotrochloride by chilling in its water. Filter, enching the product obey as possible.

Disaste the cende gregist block hydroelbride in a minimum of cold water. Wilter Adol to the clear solution a saturated solution of assum suffite which has been made eligiteth, acrid towards phenologhth alson. This precipitate brown of amino-phenol. Witter on a suitten furnal and finally water one or twice with a minimum of ile cold water. This final washing timeres excess of sodium suffite.

[ITEMS(S) FOUND IN BOOK]

Reaction for the action of avolumn sulfite upon the hydrochlorible is represented by the following:

Co HK-NH-Hdl + Na 2002 -> Ca HV-OH

paintings and hydrochloris
+ Na Cl + Na Hd Cs.

Notebook Series -- Notebooks by Edison Notebook, N-17-01-20

This notebook was used during January and February 1917. One additional notation is from August 1922. The entries, which are all by Edison, relate to research performed for the U.S. Navy during the World War I. The notes indicated as "entered . . . from small book" were copied from Pocket Notebook, PN-16-11-15.2. Included are experiments with electromotographs made with osmium (called "osmophones"), along with notes taken from published sources, many dealing with the photosensitivity of various chemicals. Additional entries pertain to reconnaissance methods involving light, sound, and radio waves. There are notes on night photography and night vision, including methods of keeping the pupils of rangefinder users dilated for more sensitive vision. Additional information on these night vision experiments can be found in N-17-02-06.1, Notebooks by Edison and Other Experimenters—Navy and Wartime Research Experiments. Also included are entries describing experiments with hydrogen gas detectors, methods of positioning guns in trenches, and techniques for disabling the periscopes of enemy submarines, along with speculations about "molecular vibrations." The cover is marked "Stragetic" [Strategic]. The pages are unnumbered. Approximately 40 pages have been used.

Entered Jany 20/17 from emall 600k Pracyanol + Dicyanin dyes, sensitizes photo plates for red up to 7000 line Osmophoue Balance friction pullon dia

Pouts in Osmophone - Try Conducting Theory Commission - The dosoming -also Carborned in + Other Carbides of they Conduct a war very hand X Telhurium point to ansonge of Cherrent maches heat ostepht for ion, slix as kille & pulle dia -X does Wester on their Union over this another dues or soprous of well. Councillat to Oxno phone lice act as Con alles + process freation The Micastrone Vbe Extremely thin -

Irench - fundadeaph below water level listen also use mucroph or also rection founds on Thomograph a de 3 pont recording Make Very Rewiting Showagraph 002 dia generalan Collering Kuchen avery Densition dice large funde also brependences 0019 light cosint -+ Eas tubes to listen to become o neces to note waves Tolished Copper plates = One shightly consider on place Expose latiful eller Shielder Unoxid ged date also combo Oue Expense Voluglet you heally Turns teed then Cartal with a corne Cont of white front Even defused Dun light works gives 0.1 Velt Coverett 0.2 cup phas 682n ublamed from a cell Contain

2 plats 6" ser I oxidized the action of the first seed NY clec 500 - 1 une 14 1916 12 pages - TW Case

Wiago Compound, our very acusitive to light which underces shoul's deadrup ortion Even when the relion of hot conter or acide is alight Dome Diago datto was stable at O"cent decompose at 10°C Therehould give good photo for randont heat in preciouse of comething that would give a Color with the Diezo Compound Das Chem Soc / ne 1907 -91-35 Doc Chem Industry 1890 9 1001 also for a the Execptional decomposition of Diazo Compound Ber 1874 17-1861 1884-17-274 1846-69- 1327 1962-35-59 Chem Sere Trans 1896-69-1327 1902 81-77 1906 - 89 - 19 Diagos are and other man & higher

Nectionary of Applied Chain-Diazolype Pholography no Premuline - Niero Process ophotography by Crown a Bovon Conget any Celar by wing deflorent deritapers no sliver was Bain telegh - Parapleur fine drawing hydraedloride should 62 good Worden wares our reflected Cornelate, pour them insulator Track rally lean suffer of conver Homalrophine (Bellahoung) Could 62 use lay Range funcion in 1 low Visibility Value areoplano men, Submann when

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lend out the bale blue pholo wave of light his all die Reflection Comer Heros small quarding sufferting to prevent there accord the are Du dourk night the pale blue light queraccy distributed weice not be noticed by one point 6) vary powerful over of and refeeland there should tracece in shal this as Drunknanght de veral mules away when a person could not to Seen 200 4 Tried this in Lab.

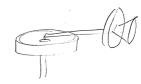
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rolation so it equivalent to 14"
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Behadama nickes the Eye greed uply securities to right in day find up is very wearther to make it more scustury the never which loutreds a scommodation Minest begrand-Hence when one and dank room for sometime 4- the prepail is delated if Homatropins to peet in the Eyz the neros as paraleyed & the purpil remains delated even in bright Light, If one is in bright Light + There is a hazz comed up or Evening appearance, the Eye for does not become edusting only slightly -Therefore in nataliceonk Runge funder men should work in chift 4 stay in dark sucours, user Homatrapine to detail an Keep delated The puper of the Eyes when going on dutiff = in The Care Law visibility is very little hunderenac for occarent afmore their nichting wo Ulde loss by the Enormandel Enhanced bens liveners at the Eura V Homathopii Can Ge u

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Notebook Series -- Notebooks by Edison Notebook, N-17-02-14

This notebook was used by Edison in February and March 1917 to record research performed for the U.S. Navy during World War I. This work was probably done in connection with Edison's attempts at aiding submarine detection. The notes describe a series of experiments, numbered from 1 to 51, aimed at amplifying sound. Included are descriptions of the equipment used and of various arrangements of apparatus at the laboratory. Most of the experiments involve attempts to amplify and measure the sound of a phonograph playing a continuous note within a soundproof box. The box was equipped with different transmitting devices, most of which employed audions in circuits with induction coils and condensers. The transmitters were connected to telephone receivers. Edison's notes indicate that he was assisted at times by Miller Reese Hutchison, Absalom M. Kennedy, and other laboratory employees. Notes by Kennedy on related experiments can be found in N-Undated.6 and N-17-03-06, Notebooks by Other Experimenters-Navy and World War I Experiments. The pages are unnumbered. Approximately 40 pages have been used.

Telegry - F30 shows facing 2 flat Ball Receiver in series - 1/16 away from grid-

also same in Milliple _

Series to londer than Multiple -Series 55% Londer than single - Hutch

2 nd Engl

One receiver I ft from grid. Kennedy hears at 30 notch

25

ditto came no 2 but 6ft from gnd 28- This is queer, probably Epot in ruend weaks land

with Tuning Record 435 Vibrations Excord go to 8 only Kenned Measuring Gox

Thurt line +
addo Res also

Rhunders are miles of 19 works

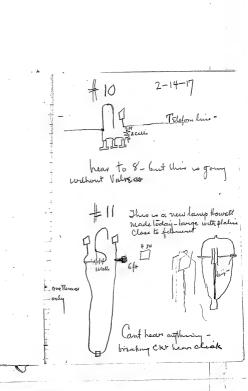
With timed record 6ft. 2 in Queries, 12 points I

When in series 6 H away but but bucking each alther get 6 points = Duly - probably magnetism uniquely do was shouldn't hear being thing -

2= Now Mulliple arec-got 10 points

with 3 m series get 14 points

2/14-17 put in E Valore lamp in Line -Cant hear authing. 10 Cello Etatlery -Cant hear anything



Fely 14/17 Pant hear anything NO13 1 GP Not tried Foxboro & - 50 Church gives correct lorogontal progression fangle of wings are not work Man 14°-from honggold would be alight Error of up to 190 deg

2/18-17
12 " opening bear nothing with door I" opening hear at 10 were Exporument

Start Door wile afron Just on Gox 14 - 3 cells on High Res cord on brownedler from online 2nd Expt Door 1/2 clased Slaps at 8. Stops at 4 ou box While of is seen any a Every themen Stopped a coording on top Const yet Kennicha w Gellened Ly Konfused noises Coming from welltout some peralably con for 1/2 mile zeroay the acr Henry ficced I hade ped function

Med n. 17 f.
Affelt Jelfone underhau carl
Res freman
11 Secondary
Trementles un Secondary weeth
3 Celli =
WM mark Coil f |
Coil No 2 1/2" 2 park Coil

coth 12 Cow hair between twith 12 Cow hair between twice try least exposit listening in this booth,

3rd Frank in booth.

Door 2" ofening Years from 6 to 8 found on love to get of only it ment offering aget of only it merely other, and they will be the will be the same as 3 been as 415 but with # 2 Coil triple below - 2 points on look

a sound percof Box-

6th Expt Cail # 3. get 12 pours on 60x If adudhow not changed this is good Coil for the transmitting or receiver #3 Coil-RES pourum MEnt - No 4 Coil get only autorile 11 Secondary. #4 col gtt Ept 45 Coil-no sic Ding Reo Preman 9th Expent 6 coel just hear it at 2 105 Coil

7- West Eco circular Carl gas 1 24 points
Think the is very high
Secondary Best yet,

Res Premary

8 WESIN Elec

q weitn Elec

on Look - beaut yet BOSS

11th Exet # 8 Coil Wester Eccor hear at 16 point.

12 #9- 6th point.

13th 10 hear on 2

14th - Booth not perfect firedome + Y 25th away was been in to oath a interference will text-Will pert low been audicide texted # y only got 12 while

Stratification of the control

15th Herestone going squiet in room

y Coil-get, from alight frying

think his dine to some jar or

air wave we cant hears

Contact of again but fries like a love

Contact of new was a base

Contact get 23, This corresponds

to first 10th Expent where was

get 24

16 - # y Coil but 4 callohoty

now having acted one more cell - still using tuning record on 30 shows a same conditions

Door 1º Ofen

qet, 25 but dhaky

was connected to means form personally jain went to it Have now # \$3600 Con covere They fine wire ruy of surface aloos to Mecreful work to see of surface being transmitted Ou neported thing about very Recording Wearofforms is the Mecrofones is that chart percacention teken to get a halding stan

7 col

7 cil -

17 Experient materal & colls weed 3 got reports, Kennedy is bothered by sounds coming them would des-Stated George passering the cohech interference in having the Continuous note from the flowings

18th Grant Dance Constions as 17 Cent 5 Catho alkhue Catho duttion - got 23 points dustles redeing I minimit is after 18 points. Through the 5 cells doubt do better them 47 Corl

9 WE now try 2 receivers to the Ear motion of 1 got 18 points no difference Receivers in Daries

20 = 10% now Connect receives in mulliple are. got 20.

21 = talking 12 ft away from booth standing up in my

Kennedy Ceen hear it but not colon putting at

my desk = Well improve

booth -

+ Sceoldan 1-2-3-547 2 Euch Premotes 10- 15 25 Seavud 93 4500 158 No Secondaris -.450 2800 2000 .42 1500 33 .38 1000 **+**063 151 750 228 34.5 500 565 300 280 41.6 40.6 100 50 136 14290 -90€ .88 38 Rubber Gare

Expt 22 - # 11 Cail -

Expt 23 12 Coil-

Expent 24 . Have changed things to the Galler Main line to Booth on gloss usulalais -Booth coaled outside 4 in well 12 Cowher double class Kenneder Deports OR Est Except very Louncat Rounds The audion or battering ou usulalari -The Meerofour is in a case carrounded with 's' Cowhour + occupended by befiler weres to bellow above Jesting on mehafican hair -Soft Rubber Lego

The phonogh is machest Lined with Cowhair 12 has lid which classes tight on to Cow hair Has opening in front with Comerna Lois Shulter first test 25th = Still get a Continues note about 120 500 show going or stapped The percently from dight line Have action u & Beec Rear as transmiter Ixis Shiller wide open -Those 18" from Shutter. got 30 points, Champe to 2 ft- got at 30 yel, dea /2 open get it at 20 points - Bellruenue

6 ft away Ises with a facen

4 11 22
4 11 20
10 18
12 14
14
16 15 anchors shut as passell

Yes fund to only to mich -

26 power on box

full of Cair hear hear at 12 pm

WE now Comment the Meers which is plugged - wany condition in time - No industrial get 30 points but bets other some of cells some left the world for coll out by markets, the heavy Comment

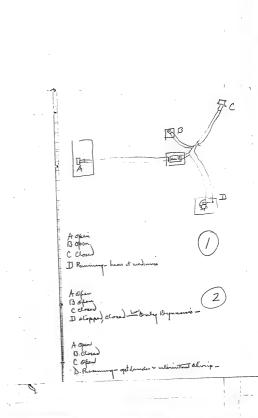
Neary have Gurned the Micaro Gallo WE now put in #7 Coil secondary to Mecoro 4 permany to line get 30 points with door one unch open which is test yet. get 30 points with door 1/2" execu with door closed get 30 still Kennely with car ne are Mecro company hear phono malher raam -What we want w for access to deteal it whom the ear heaves DE now put 2 boxes in

In all cases there ocems to 68 some frying at time strongs Their This we he point now to work on Phonomenon - when in book we touch stor one of the Europeany must get this out I have just found frequing continuedly due to jour from building given by Street Cars coay aff a other things - The 6 felar suspension is land Mecors on The Halder on 2 threamens Caro hair - Theo Iceduras

2

frequing Then pect strend tielf on & layers have the was batter still -I myself Com hear the ofry coan uncer there Contactions -If main line is openend we get it - of both Ends seasiving phone is descount don't heper it -Howthing Counciled 1 + Hunsmitter Cul ord still get it of Fransentles Cut in 40% Londer

This refers to sleamy, has lounds - not the 120 Fee Dynams Sounds volucle of get it even cohen androw (disconnected fund our light line to very morning hour The accomisency thount note strong - The note we hear in Experimental anotern Line - 2 humps But cox hour fry in a 22 Train pofor Cant (wil it.



The state of the state of

Aopen Beloved c open ? A apin -C chan stopped Chinap lest get moderate noise connection weth audion -Theo would chow no therms from wheel -A line amosted to autratical, Ouch on taken affects about put on Take Ballay still wanted to C open -no chirup, medium noise -D Rum Bopen Colosed D Rum

A Open c closed B Ofen D Rumm androne 6 actions ou table - nat unicated Action Coken O closed eg - medium Corrent no chemip A closed telephone out, C Open Baloud D Recommen A closed liteplace in Coken S 03 Closed O Remand medin

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Exput 26 Box 16 points - very quiet

Dame condition as Expent 26 Good to 2000, Condenses dame (12) 1 meensfamed Box - 26-Expt 28-Dame as 26 but 2000 unpeden of 1/10 never forms Condensed Boy shows -32 Expt 29 - WE keep condulums a6 28 same stop the gloungh want in I break wheel -The cokeel sound is see duce 100/1 - or of medium was

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Experient 39 game as 28 but with break wheat in + change from 1/10 MT to 1/2 never forms This is now 50%-Expurt 40 of towigh running wheat out. Box- 28. Exprest 41 1/ microfanad Box 28 -

Expt 42 working -Bax- 38:040-Expent 43 WE now try break whealakt 35@401/6-of wedien

Expt 45 WE was test break wheel Expet 46 : WE test break wheel on the Epst 47 Regular at both Endi, break Mefara Condensor Very bad noise - over 130%

48 Wheel put Contenser it series cocco mpedens Julael. Expt 50

Close coresent + Throw belt off keep nextor recommend upenhaps warms under under met penhaps warms under under the sound around.

No Sound of Mexico Diapped or Started - yet Krynams Oceanis - as under -

March q - Eve

Old 14 Mierofons - on table in Milnes room - on head -Though in Cocohner (cox - 5/6 hale Idoor klased - Burnel input wantput Cails, on - 3 celds, get 30 on kox - Input Call (peremony 11 clinis. Wescelettile at 250 pruning for 11 chen perming on upil Cail -

1st trial don't get as well, no wes Contact, Courthing wording

WExit The 11 chemperine back - Someling wrages

WE Evidently short child the & celes theen necerofor

abounted it-

Notebook Series -- Notebooks by Edison Notebook, N-17-02-22

This notebook was used by Edison in February 1917 to record work for the U.S. Navy during World War I. Included are circuit diagrams and drawings relating to the recording, amplification, and measurement of sound. The pages are unnumbered. Only 16 pages have been used.

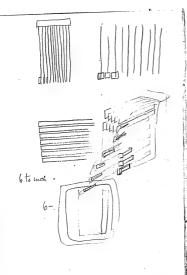
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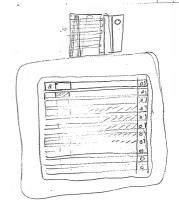
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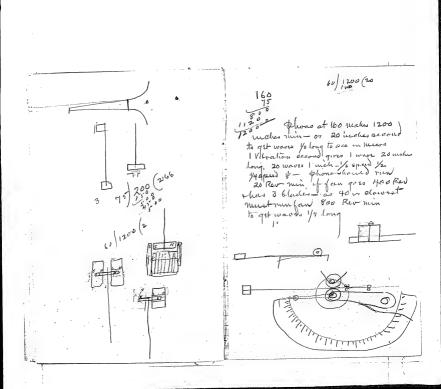


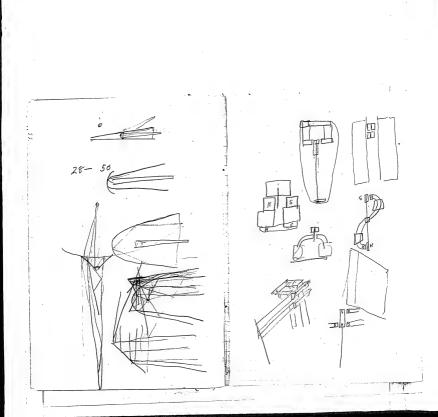




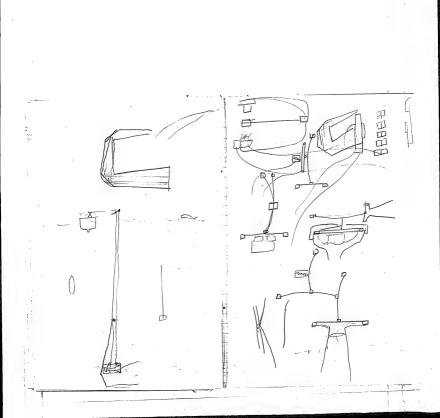
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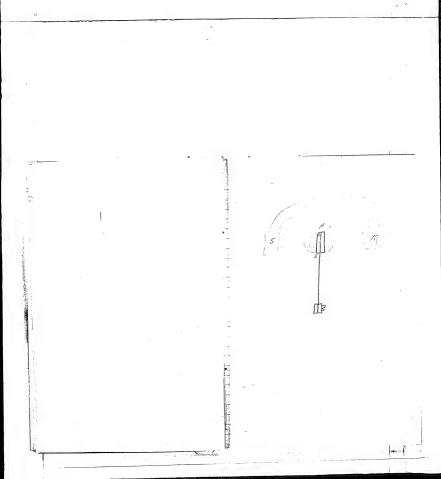
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9-12





Notebook Series -- Notebooks by Edison Notebook, N-17-04-24

This notebook was used by Edison in April 1917 to record work for the U.S. Navy during World War I. Included are notes pertaining to a series of experiments with various resonators constructed with tuning forks, phonograph diaphragms, and columns of water of varying heights. One entry gives a description and drawing of a related sound measurement device. Several entries indicate that Edison was assisted in these experiments by Jerry T. Chester, who was able to hear sounds that Edison could not. A second set of entries relates to experiments on direction finding for sounds and objects, which were conducted at Sandy Hook, New Jersey, using telephone receivers and funnels. The pages are unnumbered. Only 22 pages have been used.

April 24 1917 Experiment, with our resonant Co with water Closed at lop -End by Thonogh Draphous of 293 vilo sec forthed week As fare Experiments show that it top is copen-The hength of Column is to after I work I woken But when closed by Displaying about Dige of tube if length is 1/2 of the wave length -But if the top of a 2 = with a large circular

and rings cavered with a herce drashing are used the results so for are varible. The drameles of diaphun + the chamber deer to use of loweger deaphin than dia sed Tubs brugo in new First test shows no coaler Eduson oney hours fork Win Shortening Column by use of walls made it beaker The Diaplin used was 4 =

When a 3.7/8 dia diaphym was used still 30" no coaler Elison got 4 wales away coftuning fork from desplay With a 370 dia. Water had to be used tentel the our Column was only EIGHT makes They Elimn got it at 42 william with 24 diaghin - air column was 193/4-for Gest point Edeson got et at 34 mels The above experiment are very Conflicting -Possely the draphraps has a Tone theel when

WE now tonight have got a new tube 50 1/2 wales with large water gauge outside but connected to Column with index -WE also have the same displicage but we addition have disco of brain to fit in a notch at top of tube to seeduce the hals from 24 down to 1/2 also we have Extra disks to attained of Contracting sugar of hade + at same

for tune we was a self Vibrating fork about 290 in front of the prong we have a Bell reacuse Lohach Camba adjusted to of from Exporement # 1 41/2 dagmas dia of Tube itself -Use Vasiline to hald diaphin ring down an platform which I does very good Bill those works by fork in bount years at point when y conquest had it

Jerry finds best bount 30.6" Edwar Can't hear it them Ear tubes when phone 1/4 from Diaphin - Do there is no gain but a loss of Valums is this arraingement des tis-Earlieber 3/8 for 10" + 3/16-for 12" But Edwar Court hear phone direct Except precised hand against car when just againet ear a few thousandle afret touching & can't hear Georg thinks that with 6.5 air Column he gets at a little louder than at 30.6 makes Jerry Days fork is lower tons than 293 on hardount of Wagnet 26 HE says he can tell the best acurale as Current or sound is so much weaker

Export \$ 2 Same 42" De But with taper chamber having 13/4 hole over Jerry finds best. 5.8 for short + 25 for long - also at 32.5. Then high note, may be the Hong thank Value about same on East # 1 - best how no maker to tell by wall high and after machine

Expt 3-Dame 42 dea + ring but hale in string is now the 12) Short Column 5.2 melios Jong 2462 tott activated not so I Experiment. Note not quite us land Hears showe at a distance from the diaphragm of 2½ which & also when lestening. to show direct its 21 makes. This shows that we can do as wall with Resonant Cohemna sar tubes as - without - 4 wing

No gain in Volume + yet get benefit at Rednence to downth Jueso to to 62 ango but dont uncersland these short Columns without to the love of Dia or - overtone u fork V measured magnet Moroming a sequent West morning found a piece aftapa has fadeen on fook first; Repetited Grant - Long 5.8 Disterning take- stranglet part

We now try the Experiment over Can new only hear music nato 2" material of 2½ with Long highening tube. This is princte ally the same as with long stillmaps hills. OE now try long Cohemn will chart Statistical it shows 30.1 peractically the Quine. Reading thuis

A rough test show sound of fork gors from Dilence to silence but there is too rough to Very find that ordered noise tends to but deather - stood aux Column going Jung Same note as fork best It weak -Olso moving of the water Colim the Brase tubes makes n went be policied and

Now we have approprie measure approvatus. Jork 293 about Electrically dewan - Bell Juer no Dia abent 1/8" away

We lim that to get accurate Sesults must run Cuross Drackcally with 4/2 der most pool of wate is heard m I when range to Reak in 4/10 the of inch to other parts

hear note but hear Putting Recor on Resonalis H" up Jany heard note + of Course noise Note was of course amplified relation to It looks pretty good?

Landy Hook Experime Exputs for durestion chared off NYCRRPIEN - Amall denne bell 4" Sacht anchore who Chapper fell by grasty on Gell- hard skiff - Receive #3 Weather perfect a clear nel straight in live with Bell - Shigh 60 down Single 90° & High 20 Augh 180 Strale

Noter uthe afternoon who was read was room again Jook more readings

75 yards To Sum up The strength of anguals if found to in defeat the is TWICE as great as if fund way 90 degree from direct less to how | High % is Street line fund 53/6 % 9/6 180 11. 25.3 % 25.3 % High 22 Kow ocanthe When puff of wind comes Bell was lost completely. The further away the sound the better is capacity to find downton 25 yards 50 yards Straight 90° 180° 100 yards 5313 26.6 20% E High 30 50 yards brugo un auserras ou box us 60 Franco also a boat which & Straight 100 90 only 50

Couldn't see upon investigation . Saw a ting boat about a Mile award directly in line with The funnal Tests \$ 3 with frame Can hear with finnel on 4.3/w furthers than withaut or 18/2 times more Moise greater now.

This proves fun Value. both for

Notebook Series -- Notebooks by Edison Notebook, N-17-06-08

This notebook was used by Edison in June 1917 to record research performed for the U.S. Navy during World War1. This work was probably done in connection with his attempts at aiding submarine detection. Included are cursory specifications for a group of devices, numbered U1 through U21 (and referred to as "galvanometers" in later notebooks such as N-17-06-28), to be used in measuring amplified sound. Also included are notes on a series of experiments with possible amplifiers for detecting sounds. Several notes indicate that Edison was assisted in these experiments by Jerry T. Chesler and that a "Telephone Audion Exper" was also consulted. One entry involving a failed amplifier contains the notation that "This is Hell—War is Hell—The soul of some German must have got into the audion bulbs." The experiments are continued in N-17-06-14.1, Inserted into the book is one loose page of notes, annotated by an unidentified laboratory employee, repeating some of the instrument specifications. The front cover is labeled "U.2." The pages are unnumbered. Approximately 65 pages have been used.

17.00

UI - 10 needles Strack 1/2 gram 14/22 total length fitrs, Rubber holder / Stop-U2-10 needles Strack 1/2 grim 9/32 total length febra - Dop - Rubber halder

U3 5 need to - struck 1/2 grain - 9/32 tolad length fibre, stop-Ruller hold.

U4 is needles

U5 2 needles, 1/2 stretch 9/32 total laugth fibra stop- Rubles hoteles needles twice as long 1/2 about

9/32 filme, Rubber Holder - 2/3p -

Rubbes helder Turned out 1/32 deep 9/32 fori, Stopped

8= 2 magnets 3/8 hong 1/82 more Metal holder - this lumes but 1/32 deep, these needs 1/4 less in length them U5.

Uq - 10 needes 1/2" stratch 9/32 febra, Rubber, stop

Uson Journey 3/6 - 7/2 morror lunial out Rubbar hacker 1/3 z deep hung on a reg selk llurad of many

there - not assembled right, for world

UII Regnubber 5 needles - Minror 1 to wice 7/32 long 9/32 filers 5 needles - 9/32 -Has ring magnet in it 1/6 Muck I long U18 - 5 needles 7/32 needles 005 Utick - 3/16 long U17 4/32 hunrar 005 glass Franciquelo 116 3/16 Merror 005 glavar 4 neagues,

32 ferbore length 6/s n length febra 2/32 Libre Lought V19 - 3/16 hurron 5 needles oos febre elicateles with 1 gram 120 - 3/16 menos, 5 needles sor U21 3/16 Menor 005-5 magus cos- streatched weeth 1/2 gram - febra length

Jq-Mica wing - steel far over ducidor 154 = 98 milamp
5 wing 13/4 - 6 Vibs
shows 1/2 away - Very dead
beat stops unstandly when
Key open Showspleys 3/4" swing This experiment shows that
for sensitiveness wet showed
hows the swallost Vaine or
air resistence

U8 = sung 3 = 6 Vibs m. lawip - 58 phonoplay 1" Thousaley 1 2 swing 1/2" Note this should be more pensition Clean U5 yet is is less scurdior, probably dus to Eddy Current in the wester harder Us having Rubber

J7 = 6 Vibs - Thoroplex 1"

| 5 wing 9 '2" 59 Wil amp

| Long time to Come to Zero

| when Key expensed, somewhat

| Dewillow to whock
| Dhonoplex | 2 5 wing 2 4

U10- 6 Vibs- phonoplex 1/2 7/2 " Swing Reems to Vitrale several terms factor than 6 Vila 176 welamp - passaly a mulliple judging from the It readly is - a mulliple When dericalor Ceremit Opened WE get 4 = now champlex Duning 1/4 = Not prome

6 Vilso second phone 12 Severing 2 1/2 Un- offairly stables -3/4 " sloing -Stays Taro + Vibralin by far scandly an shows 3" nothing when Doneston 6 Vil 24 - Reed 18 Vibosec Thompson - Swing Sec probably to as light that Wagnet hald I Thoropley 12 Very sleasy at 18 Thomoslex 2" 24 Causeanch, see t. Phonopley 5 = 2 3/4 phonoplet 7 "

UII Contemina WE act Reed at Zq'2" There of neuron levels a trigles 12 Vibs per second Howopley 1" Swang 8" milamp 150-Phonupley 2" 3/4-to 1" as area is 1) Its quet at 3 Vos Now 3 Vibo Readured needle sleedy & slow Thompley 1" no count no steel magnet - no Phonoplay 2" to 1/2"
Swing 1/4" to 1/2"
But not truly thread but read

]12 - phonoplex 1" 41 milamp Loung 2 2" chonogray 12 nothing 18 Vilis - 242 Rcca Thomopley Cant get aug Th

Mirror Oulfit To 3U Rubba Babbin- 5 A, 350 ohm, phonoplex Now Ria 36" away

again 36" phonopolex away deapher (Res Suas phont) I min don't build Something wrong Domerokorie

It was out of lune - gives at 24" away of Shonopley when tuned good 8" swing 50 Kerlaup -100 ohn shunt - 5" throw Note = Phonomenon whom Res of should is moreosed The swings Come way down to 2013 wellen udustanos Phenous going on her

altogether seven goes to 14 mater) -Using Ouad Reis-Gox 33 ad alm sheet 2" 100 ohni 7 mohei -Opening sheet allogithe 14 mollés wat Paul Residence Edx 100 show we should 4" swing

far as Can go -When Paul Rea is Opening goes to 14" Swang Paul cots

ť

WE now put phonoplex 30" devay Queen 4000 olum in Swing 3 1/4" now 36" away 5wing 2 = Even with shout offnow 42" away nother Now 36" " now 8" with 4000 ohum shunt. after a titlle cohile goesto 14/2@15" g close key a let it librate. after

6 Vibo - 47 Wil amp soldering shonoplay WE now make auxeur a and on Lunes Calley right, a solder the Cooces, alment on condion Well Wheatslove 4000 chemis Frontle again Now find shaking

one of the School Chil Cell connected N to gris et junips needle Videaully - passelly accelerate Cras or silver tree former. Wy substitule 2 prej small 2 2 × 3" Lelander, specially made doi audion workno change made work

I note that weath 100 cos du gresestama substituta der the less ones 100 get same transle, a ghore in Werror Cht Thear snaps loud. sauteral will sound withand meoning necros than apollos wheat happens to stocke the swing night well nearly throw + off scale

If I stop reed it loses some thing-colile stoppen I'V vibrate Key at Murror it gwas continues Knocks gwas continues Knocks and the stops of 6 beale

Reed alone with Res in blace of shonoplet can hear it continuely in shone at Merror I when phoneplex an its

strong when phonopher uff + Residen on Cum hear wany Veloof ered lentral 00 atitle as one pleabally recelvalyer the ather DE have probably bound the Bug- it is the

The need Magnet creates a powerful field when the phonoplex is close to reed it occupates the convert we Con Tune for them, but when phonoplex is placed a poceato deslave away - The more wider field left cla Read Maquet porcdoncenales, as their on casocenit of the setting of break spring Lago ettore weat &= polent where phones wave is necelealeyed by Roed field wanter

When showoplex is surpriesed then The My mid amp to 63 We now are trying scheme to oblitica the defect, 9 LDE hear

June 9 1917

Every experiment we have tried so for and the Murror resonance has been extinctly mindeading as to sensibility of the Murror compared with the telephone,

The brouble is due to the powerful manches maquethe freed produced by the Reed maquet,

It interfered 1st because the Contact bout was not in retation coult the three on the Bell phone

2nd When the Bell was Clope to Reed it was strong the beg fredol of the Reed recepted awilliams it When the bell was set acrowy the Reed Was neutralized + we get nothing of bell I drawn

we get nothing of tell b drawn further accord the Reed recoper

Even of wore experiments where Commissed 5% much at the treach Eus + discipling of bell 5ft away to Whatel by the free of They Raw nearly extended that changes that changes

We now put 42 Reed in
Wilness room - & Extend a
fine work with Music room
Connect Reed well one
End 6" from Clamp of the
other End to a long Bell
whome - whose Conventy gasee
to candion of stay

Red now making 1/2 cumptitudes
were 2/46" ling act at 5'2" from
Clamp were firstened to Bell diaphin
With break wheel in circuit
and another phone in same
ceneunt hear the Reed
faintly

Steel May Kept un doncelor about 15" above Mirrow Coil of Mirror Det M+5. WE now oce it was can Tune for It on Merror with or without break wheel in operation were 51/2" on resd Wheel running Jerry hear family - WE get 1" throw on U3 with 65.8 Milamps weeth wheel Cut out phone in at Merry 62 pleane Cut out 7 fr mak- Herry heres nothing when wheat eteaps. for fear the Read Misiquet neary project line 21 ft we lengthen were to 38ft ft of long it engine - Say of come about palme and will 21/4

Get (Invew of 42 need coked) alopped + 3/4" cohect Jenry Quego Very fount when which Put on audion - Merror Dhunted 10km 14" llvrow-We now stron remove Their shount + put it at 5 tring phone cerenit = Shirted to olin 4" throw. grony not ours of Residano well in the porcelain spiral

Sperals ng - Put in Queen Bridge 10 anip - get 2" throw theor beg strong was myself in thomis. 65.3 to 67.1 Turned of out All These Experiences ng- Wefound that Audion well not amply low rate Vibrations like 6 per second, But focus that of a break wheel 3 to 400 second was put in

Circuit it would stoot to amplify - but there is a covient from the wheel therma wheat is Very loved un show at Minfor- yet Merron payer no attention to it best when phonograph of 4 won presen notaled part Bellivethand deaghin I susponded

When wheel was shunted Eveth Joso church severy Came down to 4" When shout recuraved + water peet on wheel it seclecced House of Bell way down The Of cention is what Courses the coheel to germent audion To amplify 6 Vits per sec are intoinettent (wount of

Current informatted (12) Each wave aftho 6 per second broken cep wito hundred of wass-Juthing in Phone + 4 vion with a straight Comment Horanger 100 and - no hurror correct Those at Werror land from Dlain wheel wow or phonoge Therow only 4" Wheel Social very much reduced - 12 less themo

looks as I it needed loos or more warm for second to Carry the Dow 6 Vibs sec Loads to my the Down of perhaps it would be second when we haden we haden be collected to the collected and could cent it and confident warmy

We shap break wheel 4 put a a Reg phone in ceremit with shoneplay, & start a shoneph with Men. a on I this dedut

gra any throw to speak of on the Merros from 6 Vibs of the phonoples It seems to want acceral hundred treaks in the 6 Vils themselves of uncedation the Same number of treaks we a Covered Stronger Man the phonoples Dince thorns (count from trak well is practically gone on account I Coale

Wheel with Merceny we are pulling in Cercuit with the wheel a german silver vion troins Couple heated over chemney afa Dunce Kerosene Laury - The wheel will dupply the Ereals the therms closeple ocepe the Crownent + the Showing in front of Russan von segment rotaled

Note of Chird out work with here were Currents

Then he best results
were get from wheel
by the Enormour necessary
of wares due to bead
Contact,

to agitale the good or pendigs the iron of the locare

bega Disc motor weed suffly the 6 Vibrations male - The thorns Current helps the Merror 5 or 6" Mission Therms who we lamp too Variable will put one and we water

Note - Without dadion or Breach which the phonephy set at 1" get 3-2With audion swithout wheel have to put phonephy

to within to af cuch to get 3 2 lowerscharling actual loss. 600

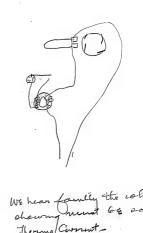
WE start bresh -Thomaplex one from the revolving Rubber Wheel Mirror not shunted, No wheel or Thermo- Thous at Merror in Corcont Bout bear any thing Except slight cohiething in ander All running Every few seconds Wheating on account Reddenly morens-Lohen I does as spot Jump 10 somory whehe

June up to 175 Mil aux down to 18 1 Md. Wat a sign of Even at 4 " 37 ruel any hear phonopene liver phon only when Merror of off sance -WE now move phonoplex away from Rebber which 7" | Epot don't moor there is no wheathery

but we get nothing WE start wheel which was phonoplex 1" away + wheel rece 5" Throw- otap wheel get nothing hear wheel when receiving load in Merros ophorie, showing shougher is ground amplification over strait Cenant.

Jues wheel don't year thorms, its the Coverent from the shonoplex that broken up ento Downs a yet the high nate amplified but the 6 VI waves don't amplefy to give the Vious right-

300 ohus in phonogen Cerent makend. wheel swang 14" WE Mulliple are the coned with ohum in its curant Just hear Wheel numor throw 1/2" xlean



Thermol Current

12 Midnight - Cannot get amplefication by Capacily coros Merros Estre a phone or 5 mf Condenses or Eath or phone in ocnies on Condend Hoor Concluded that own Rubber Coheel with vion acrow does not give a wave that Can be luned, WE now Ceet out a Cam cokad to be put out longraph giving movement to a level on the end of which a precede

from in front of the Thomapley - The chould 5 All - Jeneshed Cam wheel= Thousey set I" away from lever brow when it is newest to the changelex 5/8 Know

The audion out Tuned gaves of time 8" but veries Su account of friction ou iohael, varying the speed of phonograph, Milampo on Donelor. Hear it in phone set Murror with audion in Very Alrong at 12 wellaway of changelexthrow into of anno, but speed of Desc Varies much aut tune

in addition audion Kicks with stalic Monday- Telephone acedion Expert come at 6 pei found no way of amplifying willoway good as directive Junelly WE micole up one Androa, HE use 40 Wf Condenses of undeple wied 3 Audion (comps with this WE got at I" away of thousalex from Keebber Cam

wheel 14" Worow

which is amplefreation of 32 times - at 12 away appliance per gat 2 mch llecow Also Cut out thouseless Jut a Bell right in fernal of Cylinder & Rond 4 lestened by another phone, it was very wear but I could have t Bill put at andron Then it amploficed I showed earl 32 times afro But I noticed it forced

Merros souccohat, ou low notes of Beethereus funeral march Especially where there is a pacesent \$ WE now Council up another duction with only I famp as Expert seeps at according necessary on Ind Alego as header wank comes on ferrit storge The wooden wheel is out 3/16

Direct 1" away 4 malin . 14" 1" away 3½ (mer ___ 2" / ½ Scaoud candion 10." 1= away 171/2 times accepted When the 2nd stage is in It went to 10 miles when shanepley act at 12 and 32" water act 2" away-

Jut a Mica denghu on Sever of Rubber Wheel got about same Ilveau af Murror as with sheet two and in the Tacce sheet two way was a change in audion a got away reveral makes Ilveau reveral makes Ilveau

When the a becc phone held z fracung This change made by Expert enormously wereased the amplefication as far as an wave is Concomed - WE nace ped back the vion on lever + try tees we orywally level it. This only gives 4" showing improvement of

1/2" by the change the uniprocount of the other way was due to Knock of the Ricces on wheel -After un hour aut chis Cal many tried again Cut accolon Kicks Cant do eccopiling at - Mun of 41 ECC -2" accord -Was - Hell - The soul of some German must

I am we quet as power started of are kad well start this pur with a lot of new apparate Connected wette the cardion Wednesday Might When phonoplex 1' Two Cendions 1" away

Sorven says

I and ion multiplies effect to 2.

2 " " 32.

4 " 128.

Assuming we got 4" House on Mirror quest without and ion

with 4 androws we should

128" comparatively speaking

stopped now trying fund 5 am - get 3/4" Ilverou with 3 undconusing 120 Valet Lalamale 17/6 Best so fair done its alcady-Thomasky "3" away Deredor 37.1 Melacingo this with _ U18 Will U7 10 may Duccelor o 65 West amp nearly 3" get 6 1 2" double - Dronder 3" get 6 1 2" As the andion is now quite steady the steadiness of the Labourdes helps - Wants more of them think Vis a perforable I note that Uy is very much more acustos to shack than Vir- as Uy has Twice to due to government confirme Now we put in Vi6 -Durelor at 28 milamp gives 1" Horang throws acuse phonespex - 3" away Hard Rubber Bobben been used Lalely 350 churs

phonoplex 3" acoay
WE put in the Hearth
Resistance — Rodesin
of Merron - Don't improor
Munk the 350 Coel Gent

[ITEMS(S) FOUND IN BOOK]

U19 3/16 moros 5 needles - febre Streetlehed weeth I gram Mung. 005 needles ,005 UZO Duplicato extens but strendered with 7 prices 100 - he dies 1005 Dupliante about 121 with 1/2 green sauce is nois: but united of 9/32 total length of febra hise 5/32 -

U. 2. U.9. U. 13 have been Changed

1

Notebook Series -- Notebooks by Edison Notebook, N-17-06-14.1

This notebook is a continuation of N-17-06-08. It was used by Edison June 1917 to record research performed for the U.S. Navy during World War I. This work was probably done in connection with Edison's attempts at aiding submarine detection. Some of the entries bear notations by Jerry Chesier. Included are diagrams and descriptions of experimental amplifiers for detecting sounds, along with notes regarding their performance. The components involved include audions, induction coils, batteries, condensers, telephone receivers, and mirror galvanometers. One set of entries describes experiments to ascertain the cause of "flickering" in audion circuits. The experiments are continued in N-17-06-28. The front cover is labeled "U.3." The book contains 100 numbered pages; page 100 is blank.

Spin stout, to Getler Condances got cet 3" 5" Novoe al 31/2 = 2" thread This is best yet, Doon after andern got

We now have assembled on glass with normen & Lober Coils I audion 3 Dendem Luceps -160-delance laces -While garry got 12 I" away the leadion gives 6" - also Z" of 1/2 away of plousplax a 1/2" when Zumelie Lobertz Coil as uput Cool has hence a output Cail -

Andion - Using Condenser for autput, and 4 western êlec Coils, 900°- 600 coo-Coils. Secondary in hered preming us deriver used as injent coul 2000 Res obuiled cerces Conclement - Turn coholi beg ballony banson at 22" away of phonopley get 1/2 - at 3" devery 1/8 af mak at I wal your off Doule

135 VOLL EASON LA LANDE DRY CELLS Morny 3 Lamps in Williple are TYPE "L" WESTERN ELECTRIC AUDION BULBS USED. Portung primaries of the four Mestern Elect upper coils in multiple and leaving secondaries in series practically no Change, Perhaps it is a lettle better with all costs when all coils in Jereis. were put in multiple

of the 2000 ohms. and we ger about. The deflection a little better than he fore, got about pame deflection as one cool in Gircut. Tur in 92 misrojarad An Exporement condenser in suffer concert the deflection began to flectuate and act unsteady. Out But out the estra capacity we now have only the 5% m.F. 36 Mecraforoids pet u cet X Condensor in outfut circum Sloupley Z' away Cutting out 14 microfarads the defloction was cut down. Put back deflection / about same does \$6 microforado WE now try condenser at B He now cut 6000 thms ocross output line material get nothing

WE now put t crease N phonopleys but descharge takes places will fungues on Kel In place of a Condensor ceenas N we put a William Olins, Line Inden Ink atrip -Think I get phonoplex not Contain - Zero shifts sensitive to fenger on Key- think Condance, ldick will oplet + try Each 1/2 - No change

WE now remove the at Nand put a recuitance around laig leattery of Earth the medalle of it to permanely deschange the Dystam to Guitle, Kicks more than Ever weeth We remove the resentances of put them at C Counceling priemary of secondary terms Wellow Chins at IC

We get no deflection on key EN. of to Zero to left several my while of delorated + 2 13 used slifes Lero to right reveral who This shows leaky Condensed

+ Dulitable Nerium big no kick anywhere Each

Phonoplex 2" On 2 audion bull in - 1/2" Theore two 3 with present because ormers 5 WE uput Coils both prim + 5 m Series) na Condensers or Silver Cello, or Leak colo Except Earth wire as per deagram NOZ

Got another audion wkg Glarage battery - the 1st on has belando. which is steady while & Bat Grats needle with Reg open account /o mal for some season (Key is Connected to unput) Both Ludious Reperdice que seaut 1/2 when phonopley is Now we will ledy of 2 audious Each a reparate Entity will work together samply the Jaky Extra We make the Claude batte audion the first andion at Input. Kicks beet to 12 sweet

Amplifyin 1102 1 102 1 2 2 4 16 5 32 6 6 4	Ratio 1 to 6 13 1504 1 to 6 1 to 6	
8 to 1 1 Audion 84 2 512 4 4096 5 32768 6 262144	10 to 1 1 Andron 10 2 1000 4 10000 5 100000 6 1 million	

Thursday 21 1917 WE now have 2' and for Each will 96 delands in Tumblars, 125 aug hour Capacily of Liquid is changed several times, These Cells are in glass lumblers of peretty well Gusululed -5 WE Colo-Indiaudion all permanen un series, della secondaries - Theo is Tuput Octput Coil is neriums Dandion - Supert Rock Our new beg one + Lo Ebwette for output, at 2" away of

Thoughex get 13/4" How Steady - no state. at 12 wes 5/2 Morow in bath anderin it flickered, Jook View oul Fadded 50 V Storage battery to Euch Cludeon it still flechered, took them out leaving only Junebles Cactlery no flicker - There is Cresping or the 2 storage also ald day or also

Variable Curuls forom Loburday Trainfor Lifear only highly insulated has part Jaf I Cail delandes will alucosi -Short child showed be We now on NOI accdion Sheff the Lossboody output Coil over to an Duput Weavereng 3 andron Coil & ocer new big Cool damps to Euch set to Ocelput coil-Doct get anything at 2" Vouettung wrong oack

Friday pm. Connected known Transformer in series, and all secondary wruding in series using output coul used Lebourh in series for primare and 4 coils in series lone secondary. Ger a 5 Second (undir Ras 5 W.E. Super Couls

12 to 1 - deflection becomes and secondary in Series. unsteady and jumps. for output transformer The have just fouled another using harn with switch. M. E. ruful Cool and well each audion St has 3 add same in series Type L M. E. Bulbo. with 5 now connected Each audion Set Kas on pland andion bet 96 Kelande Cells. in Street for grid current. Changing uput col to give boto 1 instead . Uto to 1 no improvement Changing out oil to give 22 to 1 no of 1/2 the transformer unfrovement, smaller deflections Changing althur coil to give

At times audions Especially I can you is absolutely quest murror aport steady at Zero aprilationes 2 aindrons and serfectly quest her they were other to fleoder moderation of other times Victarily, without cany Change in the apparalies Donably Words or endertion for Ecould because of almospheres Charges of Electrification, or dightiming or Variation of Chettery Coulands, or creepen mesulation is cause, bygoverpo atmos Ele,

Executed to ascertain Course of Alchen Course of

No change from ocherley
| audion of Very alight trans, Electric
Cround Cut off his building - 5/ways.
But on Merrow course I consider the west off
werrow strady showing no jerro-

2. And one - with Current Cut and of Eucldung light flookers I" to 6" Contembry put in a Phone in Mirror City feron hears it plain its in surps a also a nived Continuous

With my Key I open oh but the opining The were was otile downeated + acted as Centerni = apparacilly on opening both the fleckorius was less in on coong the input coal + Cutting aff the phonoplex ceranit The throw was 6ad 2" to 608 no unprocumt, Yerry on phone wesent in Merror Cercuit thinks he hears covelars

Callo Ele = : Opened swetch of

Merror put most han

acros kny hears alend noces but Snaps + big clati disapper + Herror plands at perfect quiet-Governds all Taken off -Merros Weaves just the Decin - 6@8" Jany thinks he hear the I modernet of a Corless WE now ask power house phonorak to pull ocoloh + durconnected our buildings around us. He cant do it, although opened Every scotch - fine system Dineviddise will disconnect at rad of our burde

Where there is a fuge plea he Cant do it. Do coe will 40 on ce Ray output coil Me. Xisten orcelas note humor from battery. Thes is too strong well get Recentance in -25 mlanp - nedle steedy Hzar rolling in Shone no cleak on spening or

10 milamp flow from plate to True fil Constant no new amount of nex nor no sacend me phone -Merror absolutely Lero-

Input coil in Gut Open primary on to steady no social -But uchen X vion com is Even grully Takked wall wacken più goes off dealediscounted grid from X Alcady, Knackway do very thing to G for if - steady but

When I lough gwolch in Weirror Scortch N will The Leaveday Coil Counciled hand lorow in Several to grid must be highly mailed undies which comes to apparaully so grid contract Zero of how held on disalign Electron Charges & Emitle, the moss of f growns from Goverto BB-fig 4. Don't give any theres now will hand -This whow we don't went any gracult at G in any Even ges of descharges the grid.

WE dissources grown from G+BB of put the builder to vering to primary of RC cesar it au an autimni-Do not get any sound needle WE now ground the other End of precurery wiper which was open in otor Experient the needle sleady out Zern

All grounds off - WE not Connect to secondary of NOI Andron Ocetput coil Sceowary - peremony afrain - polien X closed only better This is only Coil out to I and ion needle steady-facut becurr 1st acidion Coil is very usensting to Knocks with wooden pin whomas the 2nd ander west Cool is very sensteva

at plates, hence less dights at roof desconnectes Prumy Open Leading To brandes 1/2 at after dights at roof Counce

get 1" at tensos of 8" lkgow loben Swetch ferd Coald Now peet precurery repect acidion I on Phonoples to the with I call in Thomophy Ckt, Circuit apen at key get the week continuent hum Ederm Coungreset have this don't three med be severely my - When key closed get the click + then it sungs + needle Vicelinly agit when . off scale as long at it hums, by opening

haved hum stops + weak him appears, Sometimes the Loud hiem flickers, is skippy I notice when Keep w keen 4 order week hum is heard a womentary touch up key stop weach hum for say I see cohen I cippean if I hald key closed longer it takes 3 of 4 gecouls to appear. WE now take cent baller from phonsplex cht april'it in at NS fig 7 The note of Coud hum is even Loudis a copporately lowed phonoplay of - preen input closed - no hum but epst rumbles that there were recented 3@4" - ballery at MS in-Now Gatterny at 115 out, Just same - Whow a runble WE now descouncet all woring with with Colors quese

I should need on that when several wound to phonoworks line I need for pumps several mether

Putting on phonoply Cerecul brings the hum Atrong of Leag throw of needly (Dr must be care that no unication correct at cateful and of the 2 and on 2000 goes back to the Junt carefron as Twisted 2 wires rubber coaled This to accuplify matters for serving with Tin food-

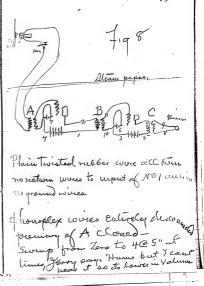
We leave out the branch of thomosphy cereant wheal runs to Merror for franch to takes back a warre to 1st andon from the 2nd TheMerror tell generates a warre or might herow it cuts

this branch cercent totart

603

There is a possibility of C Throwing Meanwills of Elabolic Lines uto B + B into A Thus runing perfect Vector action, dead woring + Enclosure of A B + C in closed vion boxes

The Mean pipes may get Meangilized by transformer of aprovada actilialing was a considerable C is at has man contrado Lines to B also is not good.



200 Change frag 8 We now put lend acours were from Merror to 2nd condion output i from 2nd could imput to 1st audion Hearnet. A premary short ceremented before granding lead Merror severing beed toget hand heim when grounded lead of one section, hum a throw want lead, on grounding heather section of head I couldn't hear him Harry Days very faint get Very wacek anceps Morror, 12 t. 4" twee no quele jerk -but mostly 1 = xless

35 fig 8 still = WE more the Tracesformers acong from the steren pepeto accide cerey demendion of Sphellering in still throbe 1 t. 4" 1 23 456 7 8+9 works served with time fail a ground 849 are lead covered calles detto 142 + acc graunded Moved magnets according towers Steam pepes no deminuation of thecobbing + herved the places neculous best it leaven of some + us

36 hum order optetterine wien how lea Cutting Light Len along the viow of all ation of 6 cell

This memeladily stopp The Reveral merry min Wiow Came way down to 1/4" With No / Kendion right closes, growy carp vary quet in WE now Reverse felousest battery 6 cells on NO 2 Mirror spot Yarfaelly quit not a stin The acception now is will ander acceptify

It does not auplify only 1 = swing when / Thought I" away Cantundersland why Which is occur Reversing the 6 cells donet, of felunt battery chould destroy amplification, The old way is 6 cece batter has neg to felement +also throbing where big ballony has negative -As we know it scoveracd we have partire to felement cohere neg End of big bestery is counciled WEslew Elec Coils December 1800 Chi 5 = Norow at Z" is test we ever had see page 12

We now reverse battery back to old place (back) - on 2 and con but Keep of revenued on 701 Lucion

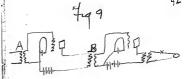
We get 10 to 12" on 1"
away of shousplax

4½ at 1½ melus
away of shousplax

4 1½ at 2" away
af shonoplay. with

1000 chus Icesestanos il 2 spools in final Transformed precurry - Jan Res of preemary is so low hard to put in this secretaines to keep beitten Current (96 celes) docol - This of Course weakens Thoughest wave Vera Meich = Ferry just finds 4000 chim Cotto not necessary he must have had a Know Donne oberes when he had to perfleen in

to get amplification One of the 6' Call backerins must be connected the Opposto af the ather Loud holler wice cause weedle to fuces which Quand not be-The uput transformer scendary of acceler 2" of one of 6 alea Endiag Cools Touched neerron goes of scale Possibly a Condenser et X would give botherder of the war, but not more porose



If say a negative waves passes from At input to the grid system it gets thru to B. Now B secondary must be connected so a negative wave enters I'm audion grid repliements get amplification. If a Passive wave enters enters it will not pass only a general inductive weak wave may get three so its not a watter of medic forence as to how terminals of B

Secondary is Counciled to Gid septem on a 20 audion -We found that while coursed wrong at B so no amplification that by Reversing the 6 cells on felliment log got amplification + Dod quite understand this When palarity of 6 oth of the 6 cell felinement Gallarm on No 1 + 2 andron the way we happen to have therings arranged that there los no completeralin got about what we Could get directto with 1'z" when

Thomosphy oct at 1" But moment LOE made polarity apports on 6 'Cells of no Z andron got 4 to 5" where the no plex 12" away, but it was not very blacky

DE now have all the covier posselle ice Lead cable (2 word Twint) WE get at 1 showpland 72" Its not steady - 2" evending uncartain WE now make both feliment 6 alteres Nag to grid-2" phonoplex 12", Throw but unsteading - When thomogh stopped gives 3 to 4" of lickers -Thus changing one of the 6 felume Calli- we enformedly more auxily

O's severes Secondary in 102

Curdion - it is not gents so great

curpledying yeary 8 ago very quitou phone

Very feed him

Phonograph Stoppe,

Severes 2 to 5 weeks -

Use noed reverse 6 cell fed bothery on

2 and ion -Now very little suning 14" good plangth attribed - good No amplification

We now recorne Secondary Each to original (# andion 2 unput)

Reaping Established forms and phongs strated.

No acceptance attorn.

We now reverse blile back to neg to and

Buy acceptation but underdy When shough stopped swings from Zers to 16@8 washes very unistanty Discourseled Cereldungs by coure occlaide - no change flicker's just same WE was Councit Each peperals Depoteur of Audions to courts. The lead covering is already no unprovencent WE put a churt around # I dudion 96 cell balling

its just as fleckery, Shurt prised The people way to stop reget Changes of the 100 Valt Cathery from amplyfung is to use WE now shout the two belands 2 ballones in Mailliple-(96 cells) to pass 20 Indamp of an improconce in the there the shunt 4 put an Circust of the bulb impedence in The line leadon Then the Change well Take to plate in bull so that place in the 2 batters oney variation in ballery quat go out into the goes arround shunt + the bull kercuit. Empedance Keeps it from going into bull cercent get on 2" planagley ! " Throsed pretty cleany at 12 get 2 to 24 The suiTranso

Hos 200 ft 23/8 × 16

4600 perft

also 500 ff
2 \(\frac{1}{4} \times \) \(\frac{1}{16} \)

4290 pm (00 ft

Short a respectano ou bath dudious Thompsy 1'2 - 4" throw- used 1800 chum WElex ubsertion coil for maparles took out +substituted open magnetic Small FR impedance Coils no twow will promoply stopped, Several makes vocequelas WE now put back two 1800 cha WELE Ind Coil, Closed May Ch! in wallegle making goo ohus tolal - done do

Sheents being on get 4@42 well phonople 2" away - show stapped flechers 1/4 to 1/2 - Comed work this, realisation day flicker -WE wulleple are each set afhelands on each audion-Double 1800 chim unductain u Euch bulb, plate concernt Quite otenday - Phonoph Z" get 1" lordes

Who now take out the molecularies from both cardians (1800)

Evening Monkay 25 41917

We have 1st of 200 cendron

Bupert Coils in Sheet vious

boyes, also 1st andion

Lamps - With phonopley

2" away get Hoz Ilvious

Perelly stealy - With

Phonograph clopped

Swing at most

10% now put scoon and bulbs in vion box The 6 feliment Callo worth boson positive to pof buy balling 33 Ja Thus -The balance on Each andion is in mulliple with 4000 ohen Obernt coround the two welleple) batterns tacking 20 pul cecups only 15 Wel amp passing to Gullo un bue condon 4- 10 m another approximately This is Contilious of Experiment on page

.

Opened Light Cht outside bldg no change -

Both Audious in vion boxes almost quiet sometime for 10 sec then only a occasional dans throwing 3/4" - showopley 2" gives 4" Throw clearly There is best yet for quiet Output Coil not yet in vion box -Ray Storage Callo on filewent, Above is results -Shunt overend butterns Jemored - phonogh dapped Considerably more unquest 2 sec Zero then sharp jerk then grund I sec then 22" + 450 on

Rattery has something to do with unquist_ Say doubto-So we must get a more Even Resistance Catley on stading phonoplese gives a lettle wars completeness when the second according a leady - best 4½ was heart 3 stady -

We now put the two sections of belands in series, on both audions - as originally - without Thurst. I st now on 2" phonoplex swings & widen sleepy - tarly sis widening to 10" + going to 6-lowest

phonopley slopped more unquesel than before Zers () 34 4 makes but most of the time - 2 eroto 2@3 makes showing scoral nurror Spots- I showing reaped deschips at 22" phonoplex at 2" Phonoplex this is Very princtical for detecting with it therow of 10 wax of 6" minum WE tried a 6 Valt lamp

sheeted around 6 Vall

felement ballery 14" cendion, dedut, als any good best found merror want aff scale when he touched beckey - yearing frouble is this stale was leaking uperles we grounded it Static This made Merror sport practically octoredy out hero + is and unpleovement possibly! not sweez

Tuesday my Jum 26 11/2 Changed the Storage ballson, on feliments for 200 aux haces delend. un glass jain goes as Kight an 16" we The both Just 2" phonopeox, - auplificia 6 @8" This shows that its not felement a Clary WE put buck storage Phenomenon With phonoplex CRF Spen Werros stands Zero but morecul that, Curacial is closed phonoplex in or out

Something Extraneous offeet the picemany coil afthe D Juput Vaneforms, that Lout offeet the secondary It Canad offeet the iron Cory for Chen was would get jumps, the by the laction of the second Whore does it Cowerfroni

WE have it very underday. This pur garks to 648 wisher fund that pulling 20 or 30 Mufard Condenser in Lene Utal I cet I down to 1@ 2" et times of airly deady +OR for work at 2" Phonoplex at a time when fluttering is at its word. Why the Condens does it Cant day - WE put a ground of premery supert Ino chango but staps places on funges Touch We put the Condensers

in right at Exeliances of phouseplex clet to want permany - Weard surve &- maxim Z" mostly Zera. Apparaulty no defferent llian when at phonopley itself-10% nowpert 1/2 the Condense w one deq of sphonoglet Caracust of 1/2 witho other, Only 12" anyplifety at 2" phonofplex in this This is Geenude Case The two occhous un geries - hence Merror gets no throbs on account low umplefrontion

Wh now keep Condone in ceries but add to each lot to bring up completeration ampless to 2@ Z'z" Now LOE put both lots of Condensers u One leg rall Multiple - Gumps 394" Condensers are of wary lette dance apparantly without there Expents are Volvated by a leaking Condenses in the lat,

WE now take Condousers out of Open cerent across ceracit we put The Queen Res Paul gal - 10 aco chim see how it beats needle Zaro no movement LOE now start phonoplexamplifus of no dop phonophy. but cut accord -Jumps - 3 -1 4" now Cut Res to 5000 Un Zurs no change

Put coil un server stouled phonoplet 10000 5000 2000 1000 500 250 WE wow try up high Resistarios phone un place of shouply-Res 2000 This keeps Werror precediately Zero, maximum theor 1/2" only ravely

god, of the time Zero-Phone I" away 60 y week Theore -Replaced planeply + pect it in percury Circuit of Reg LO Elec Juhuelum Carl Scroud. to premmy of reput Cendian Zt away get nothing when Showagh unming Keverse WE Cool put a sceafing to phoneples

no change no theres but notice flecker just some This Gang the Case I looks as of the fleaker was compresed of spurt of Very high preguency wares our it would not anaplify Leben Phonoplex fails to gross conflicting through the lo Elec high frequency Coils - if it's high frequency it concert get them dudion with to 3 Low prequency

Direct lesto without account Phonoplex 1' away Threow phonoply /2 away 15/2 Ilmow phonoplex 12 Wrow 4 2000 chim Olione (Cabot Holge) I" away 1/4 meh lurowi 1/2 " \ 3" throw-Vat Shone Value 4/10 of the phonoplay latter at 2" so same as that show at

Coil, Vet it does get them to the Mirroror it wouldn't beat,

Pat 5 Welce Coclo un

Thomsplage akt premungs

un services of Secondarian

in services —

Phonoplage un premung

un t 2"

no throw at 2"
cet 12" got 1" throw but slight flickering is

WE will Call the 2000 ohundlat Bell HC -

We now put HC 8/10th of uch away from disc on kever 2 androw Quet mostly Larg Jumps now atten but perustrally (Sigest Improvement OR - Throw 84 = 9000 Now was put in place of He) the phonopolox cett High Resultance Jumps God, nearly all in Thous for fording Andron, reduces splutter way down Thougraph ouwell rewind shonoply Wolles bad beet mean throw not over 8

Hence HC is 40% of shought of phonoplex If phonoplex is I" away from disc on lever He should be 4/10th of weh to get sand deflection -With He is circuit the spluttering is suduced so it don't bather say at 8/10 the mich Whreas of phousplex is in at 2" The ophithing is several meles While the real amplulie to the same there Accelion

Rewound thought Each Coil 5000 Turns, 002 aufle silk Coord Residens ench spead 2550 chins Total 10000 luino 5100 Donat without andion give 3/4 of wich throw Jan at 12" away wheters ald winde of 96 ohim that we h only gives! /4" throw showing big gain by away it was a tille better Cham ald shore of 12

UE now put Audions phonogh clopped Hands at Zero with about 1/8' 1" This sum along ofor 1/2 of minute then I starts of mus 4" 201 thrus lim other settles back to nearly Fero, - Very Econstituto shouts WE put ground on 1st dudion felment where by last councils notes sensiting to shouts + keaps nearly Zaris = Now phonoplex 22" away 5 carcely any therow 2" away only 1" Krow

Thunk we are forled in testing direct, as our Merror Coil is 2000, ohum a of Course a high shore will give beller, result them a low tro phone

Evidently the input pocumery is low redestance for the highres Thew winding-Fory now descards all the pulmary code, on the dudion uput manfor + well use 2 of the so 6 secondario as a primary as they are Pary high Resistance, he will now Counced in Poeman Cool of use Chein with the 2 couls no Results at 2-2 or 2" away beats bad when slow elaffe 3 1/2" swim Lolea Put a low Res Crystal
Restofier un phonogens
Ceraumt so no come back
Cumut pormale

Adea 2. Shurt Whole
of the Andron Replem
from phonopley Curent 5
Merror (1903) + pech in
high Decontamon - This
stops (and warra

also put in 1 6 alley Cell in phonograp cht in the direction to stop allow allows in premary

We now put back all cods on 10 1 hiput transfer a they originally were or WE will mulliple and The new shoroplays wereding to reduce Resistance from 5000 chus to 1250-The ought to fit the repet coel better than Victoriqual go clim-Theo boken slong hologed gives Lero 8/10th of them line now atten it jump to

Thompley Z" awar gives a very steady H2 welles BEST & MOST Practical bount reached yet, not scurting to phout Will hald this for actual use until we get something belder

Fivilher Expents -WE discounted Cath audion Lamp batteres which and substitule freshly Charge batteres - as Vallage is los high we put un resistance. as there is a gan Vallage smuch gas we will see of its more unquest than the cold batterns when phonograph is stopped Unquet about same, might 62 Chade more , Amplefons 5" wette

X is a shunt 48000 ohmo-De ad gleady when phono amplification is hurt gives at 14 mehes also 2" phonoplay dead steady-9 6000 ohm amplefication Z" esults same as f

Nead Steady - phono stopped 1" Throws. phono Running MG -

X is 192 as ohm shunt are no phonograph - Little worse Than without anyther phonogh ground

78-2 × 192000 chino- shunt. The Worse used in Dhenomenon - Vibrate perfeally was covered claudy - needle goes sofant Court hear it, fralewing in with lead, & Fran Those Edwar hears it loud but dull vibrations but perfeally pladnot weam to Even + about 15 to 20 sec their wheat of put un 384000 ohinis - phone weened was shows waves not quite ac loved but about 1/2 the number Rubber wire per second say 8 or 10 a second We double Resentance again the obus neaking , 768,000; shim) not quite so Loud dulles or bess per

Stalic Theory
BustedThe Defective
Insulation
Later wrong

Experiment on page 79

WE put a Million chin. India who have about same Educan heaves it strong in shore to about 5 to 6 per

2 Million ohms ii - slightly clower & duller needle So fan is Mrown so passorfile yerry hears it knocking against Rubber - Court see it our spalio -

now 5 Million Ohmis-Edmin-hears of still now it is very foot 50 or more second

80 Expent on page 78 WE now put in of Million Olinis -Edwar Cant hear it grany says he hears it strong & its much heads numer jumps See page 78 = left side for Explanations we been using lead covered Rubbar were of Resin

WE try Expust over again Using a single rubber Covered with and y nucleon ohms in Cercut, Connected as per deagn on Now Thullon on Edwar hears it Dee dragm page 78 Only got it in shone when the were afsheut is locached wow on the black lines -If shunt is put Chies

Shunt herz' nothing phono-But shunt shown in datted levier we get the VEry alrong Vibrations, coliceh have Varying rates of Vibration, Pauls galer Vibrates 1/4 to 8/8 leke a Read - Its an oscellation -Any look in the Cocks or between the black lines of NOI of 2 Audion will acuse there Oscellations of Violent movement

Note = These Exputs may have been affected by the Ground as shoon un deagrams on pages 78+82

We are letting to see of leakage between premary a scronday of NO Z and ion - ofter that well make we know a court with ground off

of the Westers so nothing come be securally with 5 Wellion ohum in - with 7 Wellion Neuror vibriles field length of the scale vougelourly a strows exclosification is not in time with the Neuros time—

Jerry Measured insectors

Perry Measured insectors

Preschauses beleves permany exceondary Coils of find its more than 11 magalinis probably 50 as his instrument

WE now put shent from block lines of deagram page 82 with megohin of Remove gracend were wolich were on in other Experiments -Council repeat any of the Experients only got high nation through I negotier Something Went have changed

we now Tacke off shund

make sig test shows stopped afference Z" Phonegh slopped grunt as before. Can't get augthring wette the shirt of 1 negotim -WE now severe The pumor of No 2 declion as farry in testing for usulation is not the beg low tata Vitalions got the clow again tuck ground off still

get the Vibrations, spaceed 86 makes no Change -Jamed Every viou Gox till It acoms that the Current from the Secondary of 2nd andron or rather the Vallage Julians on shout to Secondary of 10 1 audion which amplied I passes it to NOZ seconday or that the 8 or 10 Vibration) are the resonant times of Ossellation - While we get Covered in the Needros, of Church we only get Vallage in Olimit

Our Merror always Stands N +5

We put the four in shount weltroul any resestance the heedle mean stimed Yet of put in at Mirror I Vibrates 3/8 - Nooks like Wattless, Voltage was Traceyerra · acros Sheent + this though. 2nd audion was twented into Crevicut, WE now mercase the Magaline to. 12 Million ohim the Edwar hears low sleamboat Wheather Started phonogh It don't amplify more than

anaplification, when 12 keapolin leakage 12 negolius don't effect merror only Little vetralor Zero + 3/4" Wend put in 10 Million louded and merror not much not affected. a lette- now or murror Vibrale Very rapid atout 6 million -Note getting lower nealle wild 4. mullion Note now a fletter 6 to 8 sec

430 am WE Know a & T Covarderable more than we did a war will now yo home

Johnma

Whitehey pen

Test of app - Open steadyClosed - 90% of time Zeronow others 12 brea word 22

good provilect Zerm for

reday 1250 ohen phonoples
at Z" gives from 244to 4"

23/4 lowest ready
We now try high velt ballary

Selectiving Storage Colls
for the Lebender we have
been come

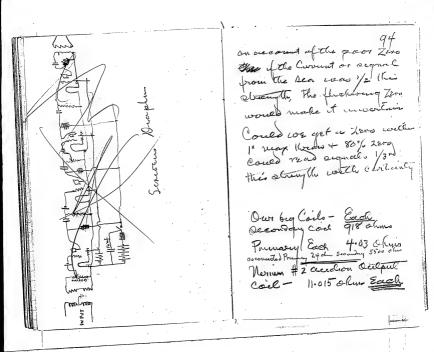
WE put Storage Bat -52 Cells on NOI Andion Zero atter I min is creat as good as delands - 18") min + then standy pleouspley 2 to 4" no section to Zero percetical - average 33/4 -Now we change Lelande on #2 Andion from substitute storage at ferst Zero paoi Z neculés Zero about same on whale Audion as with Lalands, Thunk a little worse amplefication 2 to 4never comes to Zaro Thenk Storage batter giving scenes Vallage will be of u place

of helande but Each underdund ballory should get ou a pelitant Only 18+ to 19 Mil comp Knowfe the 13 lamps of pressed WE now will add batter to peet (wonegh regular) 30 Melang or 10 Milanes per Lanep - 3 Lacrepo Gernag in Multiple on Each condion Now 69 Cells on Each ander or 82 Volto- 30 Milany for the 3 bulls -After on 1 min Zero is good (how other goes to 1" - but good Zen

Thomsplex started, 5" swing don't fall below The Edina Cattery unpreover amplefecction, Evidently with the number of cells we have ow- The Storage Buttery is OK-Side Expurt, as additional Calls superiored the amplefeed We now deld more to ear how far we can go great a steady Tero Now 138 Valto 30 unfacio-114 Callo 2000 chinis takes series No 1 audion

Conference to the secretary of the second se

Zero perfect, phonopley working I" swen The toning down restations is los neuch - The restatues is los much as I doses receptification WE now Remove reconstance in Cathery - This gives 138 Valto Jacanos Elcelrou on each audion Zero 254, 50%, within 12" 6" not after -Sweng after stantes This is preadical but



We now have received an up Fransformers Cis -CHAIN 1875 ohim - per coil total 22500 ohim Even if all the Coels of the Res would 62 156 -Thes Coil seems to 6-2 Else our 4005 akus Coll use here is Rotten

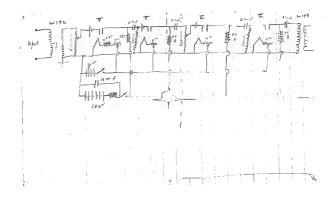
Jest = phonoplex 2" away Storage batters, 138 Valle Ench condian - battery phonoplex in I" Three perfect Zero -Slopped-Tried only 1 ball-got noswing Now yood che in precuent 15000 Accomday 13 well amperes Hofough to Steady Zero OR-

WE now change to 7000 precurery 4 Your secondary gives about 24 How WE must open coil ends to get it handy for various Consciutions - as cail in NG now in its present condition -Res of premy 155 dim Decombe Zero poor, Keep about 2" + (can with an accommend theore of 4to 6" amplefum to 8" WE now double the

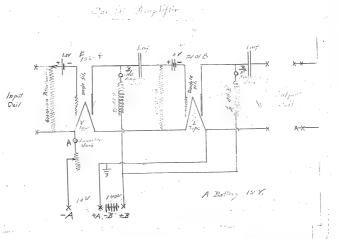
Res of premary leaving Decondary Wesame Zero 50% welling " 50% Z" a jump now 4 (ten to 3" Throw about 8' The Nerum Coil is the Gent + there is no gain in this coil - it do far more Costly & Complicated While New Coil is in WE try a apecial Expent WE Remove Induction Coul of pert 1+2 Logother + 3+4

Result_ Dertiet Zero auglification 1/4" to 1/2 = probably if phonosies was constlusing better -When but are undershim derous that planafilex all 1" got 15" House -Chooning Wilco necelliple are plan not so good ces our seperate acrotices -WE now remove the uductures outlos a line -. It gives 8" throw.

[ITEMS(S) FOUND IN BOOK]



[ITEMS(S) FOUND IN BOOK]



Notebook Series -- Notebooks by Edison Notebook, N-17-06-28

This notebook is a continuation of N-17-06-14.1. It was used by Edison in June-July 1917 to record research on amplification for the U.S. Navy during World War I. This work was probably done in connection with Edison's attempts at aiding submarine detection. There is also one entry by Jerry T. Chesler. Included are diagrams and descriptions of experimental amplifiers for detecting sound, along with notes regarding their performance. The components involved include audions, induction coils, batteries, condenses, phonoplexes, and mirror galvanometers. Some entries refer to work in earlier books in the series. A final entry summarizes the best amplifiers using one and two audions and concludes "Now for a good Carbon Telefone." The experiments are continued in N-17-00-0.8 The front cover is labeled "U.4." The book contains 100 numbered pages; pages 94-100 are blank.

Thursday 28th 1917 12 now go back To ocon Reg Series plain-4 Jry out the new input (loil furmshed by the American Transformer Co The Output Coil is facture

phonophy 6 Waves second
Thomophy remained 2 contracts, 2500 olius crabb
but Multiple Res 1250

3 bulls in Mulliple and on each audion Transformer A B+C in vion Goxes Andron bullo in Viva 6 oxier 5 cell feliment batterga in vron 130 Cello Storage Cattery on Each andion battery boxes set on glass All vion 60 xes on glass. insulators

with lead - Each lead Sheath grounded One general gracund at honoplex 2" acray gives 8" strang which 1600 to 10@11-Zero- 25% Zero 50% 12@2" 25 2 to 4" Locali an accessional perfeto 6" but not aften-Lero too unstandy to 22" for phone yet Expert could deleat

all leads timbled a cover

As degree of amplification Comes down the Zero yets more placedy with 4" amplification unstand of 8" The Zero LO OK Reapo 50% 72104 50% wetten 1" The thing to work ow is a letter thomosphex + absolule Luxertation of the system - if system had a Constant invelation resentance beleven all of 10 wegohim Zero would He Constant

The Mexica works perfectlyhave worked with tome necessor 2 LOTERS willand it oreas gettering sect of my han Burning all this times WE had s used a phonog. Rept wound by a heator or giving 6 waves per seems, I the uncomepou directing many always the same when tune, (12) Keep Milamp Constant + Tunning never The arm of shows has I

cleaphragin andy Amplification is demanty by cumming Cells on grid plate a Zero is more alendy American Transformer Co If amplification is too quest Luput Coil -Fremay 5 Coils 2.51 du Can shout Merro spool or demission balling on full plates Each Trotal 12.56 oliver Insulation Can be improved by 14 Coils I Each 1600 show use of pure rubbel or quita perchi www leaded freces total 22 400 ohm white I Total lum 42000 This don't give us any Chance to make man Changes on primare but down on sceonda

80 Ray Sersey propellor 1.33 3.99 90 1.55 4.5 1.66 4.98 1.50 2.09 6.27 1.50 3.3 9.9 250 4.1 12.3 300 5.83 17.49

We ark Ok on present merror gals if Each paddle gwe a

But if only I sound por revolution Their 200 Res min is Lowest we can work present menos to go to 1.33 por second much make an actatic neadle

Thenk the Coil is no advantage over ocers except better unutrad But it lacks in Mass of vion that over has

WE now Council up the New Tupet Coil of the Amen Transforms Co-

gives very bad Zero, from 12 to 10" ferkobut fundly butter down to 2" Zero with gerk quile

often of 10" setting shoneplex

good steady I wow not law

than $5\frac{1}{2}$ uncless board would be unmertakables from the sea as 6 waves. The throw is already but about a forts of light apats.

WE now have Amout Co Juped on DO 1 andron -Ours on reput for NO 2 Idudion of Norman Jor Occlosed - ground were at # 1 durling aff of Jumps affected - put quete so bad but goin Deals - we also at same tem look off Euch dudion I Tray of battery. As we cant get any test or account of the Kero be bad we will shount Allerra tuce of ever eccu read the phonopley High humidaly today 800 Feberal High humidity would delegement the KOH on Grettery Gaxes which would be dry Low humitaly 100 chun pluent, bad 2pro 2" shonoper - Can't read

WE now Keep whent 100 + Detophono " away get good Zero-with 10 ohm whent werend galvanoristes Merror Thoughex 1" 12" Thouw with a four Zero # 80% Zerg now atten 12" ju Now 10 ohm shout Phonophy 2" - Count 62 over as it occuetions

Courte Zero at most to not aver I" The bell phone is in chit with LOE now put shient cof 10 Elim around me plane - not so good ocound the me get 2@ 2 2 standy This Thomostery 12 parx

WE now put a Mica Dea on the dever worked by the our of Desc phanogh! bepliciting the hurror whice 25 to To colum 15 get a hero that we com work well. (zero now best. all soes volvale sente) we put a veg bed longolione (In front Ver with mica & Con gat off Vcale cet 3" 1 at "6" to 10 to 12" of at one

Loken we wil the wheel Et goes way do con to almost naching il 6" away chawing ette le Vitatilians and due to Knock of Rulle on Com which Thave always been doubtful if Vibrations of 6 per sec west into des as a sound wave, I church don't of this helps

to confirm it possessy it may but it is very weak like a fork as was cant abudence to any Extent ice it goes does du the thin WE now put the 1250 ohm. all florogley a vion des 2 book Set it 1/2 away Chunted Merros coeth . To ohim to get a Zuro workable - Chat 3" deflection -

Now we now dements beeverlance en felineat 6 actions of Earth cellions 5 Contabilions of Opinal on mande Res about the same or 5" swing -Made 5 More moves on Resistance - 2-2@3" sweng Made 5 more moves gives Z'z defloction. Made 5 more moves give 2" Swing - Yellow red Now we put it back to command or Cut act 5 convalutions bright yellow seed - 5. WELTY 5 mote Res Exercalisions 6" or shath less full ballery on - noga

WE now remark 1/2 af the grid lactory on anch audion to sec so host it dow - (Meners cells) for last 2 weeks we have been using -118 - Mirror -Us now put in U14 6/32 henrylte no Coutget Zero.

WE put in U6 z needler This is very acceptive to free MOTE = Evidently U18 is unique in Gena unenstive to shock a WE shall perobably have to make many desplicates: to get quad and Cant do anything with U6-WE pert in Us 2 double lengthe nead

o nearly as atomay 26.1 about-Light los big = Hat cangle tuning 32.8 colcour Steady Like V18 26 - light big to pretty accessy real as

deference to believe this atte attens NG as Compared

WE now try an Experiencet

should not be marked. 2 batterix now put on Mulliple arc Marches off Eq Mistake Now 2 Catteres Muchages auc 12" acomy showage Thomplex 2" accord 1000 shun should // Nerow

tooth a steady Lero the throw at 2" according to homo plax would Containly Exced " This alows both sides of the leave is containly a great advantage, At the film battery in or Callo low ion new Change for 5 new Collo an coch Using 3 bulls on a side

2 " phonoplex 1000 showing to total -Welleple aring bothy no extracting. Muliphies 8 to 1witand of 42@5 to 1 with I single andion agreement I cerelian Dockte -WE replaced B 2

dudon bulls for Key ques we love using at 12" got 22 duch got 1/2 sleady Mole We now put 5 bulls in each action of last 1 bulls how It will require considerable felm ballery to run These Wills were 5 bullis - tomokes

Cail so cas put in 3 m 4 It of heavy resulance wice in leadlery renewit Duftlying Liling -Becaught Locarpo up so bright red with Contrain down not yellow red It is I" Weron at Z" Con its uncortain as I get Zero attem -5 He type a

There is some doubts about all these double Cludion Experients with BZ Lamps, or also old Laures, I found when lower cuction double was in or lipper andros was working got auplification but John Culbs Cut out of Lower cucion bulls Cut in got netting of habits quit at 1"phonoples

of them I was less than derect, Bath in shonoply 1" get 5 2 Merois -Ald Lacups - put in At 1 1 10 2 amd 3/4" Both logether - 4' Coils must be wong LOG Staff to 1 mentos

Both in Coilput back DE now have received from Amen Francformer Co another input coil which is a duplicate of the first one got from them We peet this in place cof the Over Eng one lising stice the herman Coil for output

with the De 1/2" on No 2 colieu Reperalsly Exercition steady Lero, a salesface 1 When 10142 Zava, are Operationing logistics waget 3" steedy wear

Theo is high water March -One audion (Duplex) 3" Deving when phonoplex needle more Than docethe Note that Zero becomes sleady when our cail Cut out Amen put in place scolably Obocomy less WE now add the Amen Transform Cos Output Transfer in place of Meriums Jero more unitedy-with 2000 ohm whent on Merror get 3" Mercio- act 2" phonylag DE now discourse the Raples acouncel for 2 separate Audious in series the Old + Regular Coay The Zero is so Ead Even with 20 Chen Oheent Can't tell anything in any Event it

dont ocem to be my backer at 2" phonology liven a angle Duplex 10% have not get the 2 Supert hauxfarmen in bean boxes of they we only 3ft report 4 strate clies many 62 Couse of mutual uductours, WE now move # 1 audion west Coil we the oller raconi -25 ft away from

#2 Input-Just as God a Zero Muchepled are acce premay Coils in Output haufore Horrible - beg rocer in phone-2@3 Megachin Creep lkak

Thursday July 5 Test with 1 set of andion Bulbo to determine blad Connection on output Transformer all primary Coils in multiple all secondary coils in multiple pro quite steady 80 % of time almost still rest of time deflections not exceeding Throw at 12 phonoplese

from 2 to 3 makes With Primary coils all in peries and secondaries all in series zero is 50% of time 1/2 throw 50% between Throw with Phonoples 12" away 8" to 10 With Primary in 18 secondary coils all in multipile get zero 80% of fine almost still is

of time deflections not Deceding) one mel Throw with phonoples 15 away with Prinary Coils all in Series and secondary Cails in series multipile zero pro goes practically all The time from 1/2" to 3'2" Throw with phonoples - away steady about 4 north primary Coils all in slives pultifule and

0 70 %. of time Time two to 3th Throw with thru 1 = "away I to 8

A new Exp with this at I"away of ophonoper, get scendy 9" Throw & 12 Thoughter accord get Dleady 2" Norois - Tero perfect! The idea is to Keep Coverent of 1000ell out of Coils X is a superlence 1800 cfm being seconday, of Queta glic shorte Coil a fived only melanepoiet 110m to Bull-We now mercase the the Mecofariols to

Mecrofounds on a side Thes moreaved the thecow to 3" but it was a shack unsteady beat from 2 to WE now add another 108 Judention Coil at X to moreone Welcompares to the bullis from 8 to 16 Dealably - This don't imprecate lacoro Ent attrally reduces it to 211 undered af 3" with one coil

We note weeth this

corrangement

125 reques 56 mil unp

to tune to showaply

Disc rumming 90 Fer

LOE now pretthe Z Coil un Octies -This increased the Theore to 4" but Low The Zero o Oti 1"only 2 mf on Each sedo WE now now put Each quale it 4 not on Tuch Condences gives 21/2 about + net 4 costd.) DE now put 2 lef B page 39)

Gives 32" Zero is not good goes from 0 to 14" quito after, + would be wellow with I series condians allhaugh peakately CR for a Duply Condian WE now put 3 Weden Ecoc uduelin Cocto un perces of X heaking 5400 Oliver undrectornes gives 3/2' but of ECC Zero Lat give Eucceigh 0 to 1" Opened Coil cercent X get nother

We now Cut bacceuntro 104 to 52 3= WE now Cut the Eattery down to 26 Celli-Zero stice gref 3/2 to 4" not good o to 1" gived 3" zero not good () o to 3/4 WE now put on 6 Cello only method of 104 cccls on Reagiven 1" Thraci-105 now Coef out 1 Cool of the 3 m at X

still 1" Herois-106 now put on one box backing 26 celli- Zero 0 to 1/4" 2 boxes but an Mulliple -3/4" Ilveris. now 3 boxes in Mulliple 78 cells therow o to 1"nothing gamed here Don't Chile Eccory has any lung to do with bad Kero as for as bubbles or change of Of noce Connectable the Caclains 104 Logette but Reverse theen

thing of to Lacues Magattera to Plate in ball tople fang Coverent your Cheranet a Voret nothering - Zero perfect, They was it WE put back Zaro is gust as great well 104 colls as retect 6 call, This is singular = may be the Idento after all quot the Carl Josephy to

metallic makel-WE now with 104 Cells on a Condenses of B. 2 mgof 4 mf Tach Dido of the W. Electric Conde to put in One of our oldCondenses Englace, 24 @3 ly WE lowered buebs by only 3 calls beet only 1/8" llorow Phonophe

WE now use of Cells world I make unather Change - to wat mecanicas Microfels from 2 to 4 at 13 page 39 Zero O to \$2 - florow-12" but it Zeros Dame ald with Lero

WE now use one of the AmenT Coo uput Coil uestend of their scaquelar output tack to ace of wa get a letter Kern 3 mfourty co an imputical used unscend nothing at ziphonoples WE Keverse it 4 put price

It nothing - Conditions not milet. something 8" Those is best got Octa of Amon Transform with 2 peries Input Cocks 210 lum to dudions = Lero Varyung from Deconday 14 coil. o to 1" Therow -3000 yours Each 34 wing

July 6 4 7917 103 now put the interposed Do far we can't get anyther locacion an uctuposed Luput) Coil as made by dTCo this being so, of scenis strange woo shared get anything when its used as an WE now divide The 14 Colo of upul Cail for a second Coels AB into 2 sections quelliple are these to dudion = bring down the Excessive Exput on page to shows WE get 2" howway ito two high in recession waking heard uplet Coil for a 1/4 of the sucrestainer Second Cendron to high Jesus Cource The vion borgest we put the AB coil in has ocopped Enterally the loud Vibration we got last night by putting word at A or B across from Eccondary to become

NE now put both mput a utomediale (cil m vion Goyes 1/4" Heich - 1/2 phonoply all Coils in

12" (Now Cut udomedicale Transforment a have place duction

No grands on dead sheaths
anywhere - 12 phonophy

12" (Now 2" phonophy

12" (Now 1 12"

12" Wason thank a Magneto
a gal made in England

of testing in Megching resistance of medical test our

lath premeny a secondary Output Cock to tester, I ga Drow Core tested twisted rucker covered come Cohoes nather

Now king peets a Clarkone in Consul with the Certar, a coil. Herry hears at D Change hearts hum of Magneto all rom about so to 50 % WE seperate Coils Jut formany lock of fram logaller that teach Same Many, Cracher . in Claphone to fram a calcar Same thing oconnected 1 delephone, Hum much

almost garia -DE now try the Neverum furt over to magalines Beliver beliver the 25ch of Cool, infemal Output Tracesformer between the 2 cais just below inferity Both Duput brace of min are about the same Just news infently

WE test A BC DE by pull x at these points. Refore starting we test equiam
12 thomograpy Throw is. 10"
2000 to 14" goes nec core the Icale showing spats Hum is there on the Exitshe hears placenty of its those apits that works the needs 11 alcully Now at B get vaine Rpits. westle goes 10@15- Ectour Man so many spects & wet lo Viclently lagitated -Now at C needle meadly with 6" shows skets form for 166.To -

Now I needle way off reale, spats quelong Days - great main mots Splts of Counter Now E needle at 1st went clean off Them Delclad own to 6" scom spots not prequent Henry Occess a stoud Deny posserful spits, then we wer like pleavious tools,

Now at Freed of scale. all the time - Jerry Day's strong apito, come in lats of 3. . . 50- per min This all seems to perior that the troubce is the Bull That particles fully sour Carrying heaven Charges than the Electron Kinging tester believe gno applate - gave as dow as 8 negotime When Taken certer Cracket the

the damp felencist is not lighted but Cold - accillate Shother Lucy gave infinito -The one that gives & may has one at the wies leave on the Tried our of the V Lamps has scendetance cover 40 need This -WE now take beccome of the 3 Jeogular Ande bulbs of text succession afthe 3 un poeralall

the test is Cold facionent Its just below infenity WE now willout kegger put a should around at AVB fig-2 - with a leegation 1 Ludia Luk Fris

WE now councel heaves nothering on believes -A Reg ATCo input This Expent is to see what

impreadement in acceptifically WE can get by lowering scacebus of the NOZ Input scoulary there colicel when ularpased ma single accordion we Couldn't yet complement but colich when 7xy coil mulliple gave fair amplofication -Cant got a Zero, Vitrales very back on Mirror line,

legalar beats of 80 to 100 fucip- Theo all stopped between Lead sheath gra which arted is a Container Even funger drew Gright spark from Open pale of Nevros scortal grounded viou Transform laoxes this made it better, Tice so mirror stand on scale but Junged 6 and - Spals 100 ohu chunt Zero 8 to 13/4" - nothing much Cool may be

Reversed - Thomaslex is Very strong high note wohlstle, throws needle aff scale -WE Keverse 5 Cccl Eathery on 2 ander Cant do authoring with t no accipalification, Us now test so I duction seperate, then 102 Deperate, 10 | - gross 10" at 12 phones. Sheet aff - A B are 2 WE phone Coils D are 4 mf of conserver aceto & Cap The Trecuponer Couls

Cant get anything to work Except Reperate DE now connect NO 1 androw as plain Chudion of take Eventhering aff glass get 2" (locaco & honoxía Varies from 1/2

000 When they lose meg weling the unlamp go up Connected all the lang strips Wrough under mk Res Itales - get 6" swing 12 plonaplex Zero nut perfeatly stand. o to 1" generally (can -(1) & now connect the . Ends X to South -Nate 25 V los bean using lost its reagned. no advantage. Cad from Violent Knocks Zeroon holder due to U 25 lost magnifican

Its ok 2" phonopley 2" but hero is bad with a without the Indea wh Res now recuovad DE now discard all lead covered wice use twisted rubber Ends at batt and

WE now Councel NO1 Indian Input so its Decoudery has 1/4 of the ecceptures suckees the swing freel 10" to 6" that the Zero is no better in proportion Dut Murror ckt rig phonoxetex 1" away get I mak therow

WE now Try a grid condensed I have made - 20 sheets about, 2×4 with grid like Ceuler Electrade first lest is wellow A accedion damp which wo for purpose of preventing Revenue Comentes opelling There to Condence. Ind test is well duction

Written tests work only give 1" Ilvon when shonoply 1/2" acon Dioloably Condend Los Quell Cuparel WE ling this to one cohat tweel di-Don't work - but 2 chake 1900 chus Each in Derices in act X Theo don't wor

Ara Expt X Coil not connected nate zero-

74 un the bell n to 101 nate Dero

ATCo output -We are going to try a strong Electromagnet besides the 3 bull to see of the Magnetic Lines Lacce altract the Electron and + wake it steady -It makes a good Zero but aniplifying power

We now put maquet 000 ustreed of This not good Lero 2" ShonopCip 22@3" llow - unceady butgoed

WE wow try a new Experient Justead of wing 3 bullis in Mulliple cure While cumply fying powers don't wereaux after 3rd bulb is in it is haped that pulling in ocoeral Mora Than any posticular bulb of Electron core in it it well be a schall % of the cohalo

+ thus while the sudden Strong epits occur in all Laures at time, they will on account of the necessar of frames by deedersed in changeth of gross a large number of weaker one which well not bather 2000 0000

Its proceedly not the bulbs Bert It is clatic affecting the bulbs aughted doubs of static - The resentance of 7500 chim per lamp wice 68 scard oned by 8 Lampes to 937 Chimin --

We find that The Duddom
Spits of Coverent Concer Even
worth 6 bulbs in
Mulliple - The Terro is a
Selle Getter of worth
2" phonople was just
wives less than 2" /www.
Heroberg to 3@3½"

Some of our past Expents on Lero has been Vitrated by bad Contacts on our Junaing Orum -WE are how closering the wie bands + Contact Springs

Jug 2 one direction begalates Chustondy Merron celso This. Reversed Cattony - just as Gad Act = unecady-statio polen monger switch a could Reversed Gallery - Wavey pest the came

ASP teg 5 Always notice that singe hummy Ete is always due to some change to at Octput Coil of Chideon, of uput Coil of 2nd audion -DE try it com Councited I werey at X nothing - battery off-

Past Exputs | way | cell swang of 2 x 5/0 on till 20 when Page 3 Gook 3 One audion seoning want from 2' Input-coch 4 Westn Elac to 1/2 " Reversed Galle 1800 Ohm Closed Coils -2 cells bral of to dead Dremarie un peries secondar Zaro - all the time Using Condensors for Ocetpet. of Exercits phonophy 2000 Ohms from battery to Bull plate to carry the Covent Z' away oru Thoroplex 21/2" away Thoroplex 3" acray The 2 cells that at 1" goes off scale Killed swing was pasitive thrul second 56 mefoli 135 V Edmidelunder -3 bullo type L

Condensers for centput

give beller Zero's are much

higher effection of theore

precetical + checket
This at 3" phonople's is 18 times

amplified from direct.

BEST + North

WE now Dup the Exemt on Dage 83 - but maland cook Wishin Electric Codes for input we use Amen T Cos input cock a 56 Hef Condemens for output + restered of Zooo chim Res LOEuse 2 WElea closed induction Coils 1800 aRm eccal un carres Mandon bulli -\$2 Weller coils 104 spurcelle The gives 2" Horaco worken Chandplex is 22" away The Lero is preetly good OR for Z' tried 3" away of phonoplex 4 got 1" Which was very little developed valdou went to zero, it was unmislakables - 3 bulb use

Using 2 ATCo Input coils both formaries + secondaries en series + 208 Cells in acries_ possibly More than 56 mf of Condenser's -This doubles battery inbull toubles Volts on grid-It may mercease the amplification without wousing bad Zeros Doubly 2 upatrocholourd + possibly only 1/2 or 104 calls need 20

audions in series with Condenses to displicate the single I on parage 84 ATCo Input Coil - 1250 chun khonoply 3 bulls in each suis Thomophy 22" away Nothing Reversed the filment battery on 200 and and arthury. Donething wrong - probably 2nd Batch of Condinors (ch) at 2-2- gives 6" Therow gat 3" gloss 2½ malis-Lat 32" phone gives I wech with

86 The Ejain is no where read what tohour 62

Whereas of first audion amplified the Original Cownil 10 times, which it containly does the deflection at 3" to but 1" Dee Deagram Dage 842 WE will now try thisas it is semplier at wat could recound a single coul totake place of the 2 septerate Coll WE now docable upthe battery to 208 Callo hustiand of 104 as with X result, I don't unprove still 1/2 llvow amore unslandy - its net more battery

we went thenk 104 cells is enough WE now double upthe Condensa Does no better state 12 WE now mullple and the Dumary Cools af the two Input coils, leaving Occaridances un Beniede This is not so good We put Them book in for four they are not un right direction we rear doudion - no first way was OR now put back

Now we make another Change - We remove the 2 Weschecor chake Coils Asibatula 3600 chins of plain resectance to see what it dois no good must have Chake Coils - Very unsteady Teno welkant there to Econely any WE now put the two cocls not so good as 2

WE now but 2 m series across of then 2 more in Dercies - This neakes 4 Chake Coils - total decrestance 1800 Ohins their permitting twice as much Current from the battery to seach The States at the 3 Gall. as in first Expensel with This is Gettler yet 1 = cd 3 play Otter Zrero-WE now remoos 1/2 of the Concernent -Its not so good only 1" of then Lerad once

well alift the acts & put in the atter act to ace of deference in Condensers no defrecemen Theat to have acc The (oudences an WE now remove 1/2 of the Cathery on grids leaving 104 Cells on This is fetter gives 12 + pretty steady added the Extra bunch af Condensens beet its too much make it unceady

WE now add 3 more bulls neaking 6 bulls måll-

93 Finale -,550 Sim Bien wind of Throw at 3" phono noco for a good Carlon Welgon 100% 15.6 125 times

Notebook Series -- Notebooks by Edison Notebook, N-17-00-00.8

This undated notebook is a continuation of N-17-08-28. It was used by Edison, probably in July 1917, to record research on the measurement and amplification of sound for the U.S. Navy during World War I. Included are notes on the construction of mitror galvanometers and other measuring devices, numbered U18 and U24-U35, as well as an experiment with a "silver carbon telefone." Additional entries made on board ship near Sandy Hook, New Jersey, relate to Edison's tests of experimental amplifying equipment for direction finding and detecting sound under water. The notes indicate that Jerry T. Chesler and Absalom M. Kennedy assisted Edison in this work. The front cover is labeled "U.S." The pages are unnumbered. Approximately 20 pages have been used.

Re Made U myroro -U26 Imerror fairly olable to shock U18 Quite stable as it once was aute Slable

U28. Extremely Stable 129 - only fairly slake. U 30 only fairly State. U33. Cant get in galer for it
U34 pritty Stable
U35 @ Wobbles bad.

Experiments with Silver Carbon Telafona This Examt is nG - gerry lears it He now uses Stathercope tubes + goes into another building get music clear agood in Carbo We now stuff some cloth in funnel of phonograph - Can weth Conton hear Music but very faint - 16ft from Shonograph -Bell-Can peat make out lune at

On board-off End Hook The boat roll considerable When Engine Tunning + Goat rolling some phonofix 12 get with 1 and on 506" (brow Keeps on sacle fainly well -Acale too narrow with regular Juner-should be Twice al wids. There is some white Caps + many vessels lay un usede ou account of Storm outside - Geen Howing for Z days from North East will rain Think the pivoted Tuner will be necessary for

this work-We only have of the any Gatheren are Evidentl I notice as boot swings around the Zero change don't undersland this as alrong tuning wagnit ought to hald it The tuned | Z' shoupper away is failly sheary Viny little static

How no vetampt at would using the small rebber Covered wires, Buy Many but Condenson o Calle Hosphing else right on timers also -- both in oight Big Tug. 2500 yrds get 1/2" Ilheran - on-270 Wedampon 2 Deans

Want to boo on Tuner Notice When 250 newamp on tunes Wirror apat Reeps Less with Z' alllingh Cost rall Very muste Now 240 Wilamy Boat

240 mlang best 270 cecpes try stopped at Highlan got a slight tuning at 100 Whamp Now by Wil amp Spot Keeps without 2" of Zerock Ok

opened to The opat light was OK & periotical - at 7 miles spot sleady but now woul and of scale is least Imavas lis dout Cother at all -Prolouble Ducaron low Res of Water glione (all reg bell Monaphy Carlis 1250 ohing although 2 sleans u sight got n at Now Welaup Wil amp __ shows 1/4 Vib at 38 milays Big Atr Commy into Ambrose 5 miles acres 42 Midgup Contes Was a lug 1500 you we sight night simple to the

12@23 was milany, grunsertain bug Str of in right - Rutin makes afog so can't ace on showeflet. Jos que volver 4000 yes at 245 milant get on stanles This Wein's upto Gos Milande Spot alondy at hero roll or Justin - god willing from 245 u

(blank to loos Wed aump Or now take off baller to gotran a to 300 Boat made awful lurge 20° Everythin Boat 250 Juliaway proashed about Tero to 1" voregular but Iero pept of All these results with ald shone in so far are Externel, Joubland -

with Switch open at Wirror we get the throw voregular of 1/2 to 1" + I not from the sea Evidentle 745 Wildup our Junos is sending to a swing colien ground to fee -As we only got 7 Will amp to builds were Z More 102 Induction got 42 Welcom In bulls - now Vary much work acusters -Whe rigged up swelch a could twow out sea phone & puel in another phone will bout phone in Tero with sen

get from hero to 1 12 The - cet lumas 2" for neveral second Str 1000 yards all uncertain da mun ago he said 3500 Hols -Either the is lumo of rope or to bleam no doubt something Comes, from the area but to not a sterdy Iwow

Note that we get What is it the age and in party or Condum in white Exp about 7072 Cant day what a Wulliplo Evidentl

WE now put wither Long Bull of 040 ohum per wound Cog Milner This is buy much move sensition at 245- when We bout near vibrated nearly of Scale When 2500 yrds away Sebration about 2200 to 72" We get gump on Merror at book go off-Jumps from Dand Zens to 1/2" = 620 well any was on tuner—

Notebook Series -- Notebooks by Edison Notebook, N-17-07-11

This notebook is probably a continuation of N-17-00-00.8. It was used by Edison and Jerry T. Chesler in July 1917 to record wartime research for the U. S. Navy on the amplification and detection of sound. Included are experiments with carbon buttons for telephones used in experimental amplifying devices and experiments with the telephone receivers used as transmitters, as well as tests for electrical resonance within related circuits. The notes indicate that Sherwood T. (Sam) Moore and Charles T. Dally assisted Edison in some cases. The front covers labeled thos, 6."The pages are unnumbered. Approximately 25 pages have been used.

July 11th 1917 Experiment with Carbon buttons for Carbon Telefone Metallic discs coaled sow with a Very Thin folm of Conducting Long Coach · I or more buttons Under Lea receiver Judia Jul scenes to Ga free of specs of Lump & Carl its in a Cement Cake Destrin When it dres on glass

or porcelain it is not rubbed off by funges -When thin it is light grending Lampblack with Galdin to improved a get all out and also Rubs of 6 -Well Destrin can get most clots seet of acts like udia reck but it tends to pub off-y nely or acced of Congulates + The Lumpblack you with

Clots as original = This is very striking of shows Care hunt or laken to percount. Coaquelelion by Yourding in talle agate World Hycerine + Lumphlack branks class up geteatly - no Electrically Don't dry if Course

water 40 my which deluted shows brown not clots to drying on glass sporcellin - Think this well by good of Conducts ok Cur blank Vacunsh & Carling Resin - My as alashed Europe leaves vectore this Clots it with Rosin - Rutten -Record face Van work lok clots durappear tracept and dones quide woke very delule dont rub aff - franton much lead in I,

Hovemade films across glass to measurin -Only the Recond Vucumbi gwas a click in phone, when I call opened in primary-the phone + Sceondary in ckt glycenne a Lampblack is boost or loudest but presbubly dueto Water in flycal probably Res more Unan Sevendal Magahinis -

If as a button, it would pushably by 1000 shis Moores buttons 1/2 lb pressure 41@65/100 of ahni -With weight of disc only 76 Ohms, variable by jard -2 Lampblack swifaces together, WE now with Scales starting with 10 grams weight

A Moore button covered

Beconly with Lampblack
and Schools Lada gives
with 1/2 lb pressures
62000 chmis - against
TO Megahin I" acrais
eplais or 155 times
west on button,

Josed Macores bullow with and acrep meter -Very weigned as can go up to 50 Mil surp + down to 2 weekings by pressing

5 grams openerally makes def of 2 wil wing. Johnes in Series not as yourd as a single betton appareently his film weinform as noticed one button stuck lothe other, Moors gat Ucen Very fort + clas Laurpblack put on Ey engueraning down to ctiony highrentic procesures WE are trying to runcos the our defect by Earaph Lampoff so remainde

is in a quarer \$2 to 1/6 # The white superexciting the Lacuptack Opato, This shared siemaoz the air firm trausce -This is more sensitive so 500 Judg shows 2 mil curp Change I from Occorne Milgunden but it was against a complete Carlone conference Edison Can hear the wheel Rosens to to the of a Wilanep parmy llow a pereman

I call storage balling (Meners) prenny 260 ohm Securiary 2800-Put Cell in without Coil-1200 chim traught it to | Milamp - 9 could hear t Easy with 11000 chimin Can hear perocally 12 to 15 of a Melanipari-We trumed wick of Kerosen

Some Lampblack the ald wa once used in Early days for Frausuntles Cuttons_ The black was interestly black and a very fine conductor several times letter than that birmed by Dally Thes Kenosene Laupblack is very according to pressure it Cakes together on possessions 4 Y Church LOZ Can wake small bullow /8 X 032 lick Utual Courbo houndled

Owe thing a Cerlain we went get the presence disc operated key Thone lever so it bears Even on the Lampblack otherwise it teters of just an lekely weaken concernt when pressure of their as to their please it

monday July 16-1917 Tests to determine sensitiveness of long hell receive used as transmitter. aparattus used amberola 30 with blue amberola record playing Smiles, Then Kisses Walty. Phonograph is set in a to box padded with cow. hair and has only one spening in front to in deam. The box Containing phonograph is set up to about the same level

as transmitter under test and derectly in line with same. The line from transmitter to sun to Chimeal storehouse building where the sound is reserved on another Bell In all tests the phonograph is moved further and further away from transmitter until the music Can no longer be heard on receiver in the next bulding.

mark can be found under deaphragen scratched in brass bell. This was done so that transmitter is remove from rubber shell it can still Fransmitter #1 Lest. Test conducted under gen noisy condition prevaile With phonograph 6 ft just about make out times Phonograph 7 pt away could not get entire time the predominating notes only being planly heard. Thorograph 11ft away proches entirely gone. Cour hear the phonograph at all. Jest with Transmitter # 2 Under Same conditions as Transmitte no-1. about 4.30 AM. With phonograph bylaway from Transmitter could just about make out time. Phrograph 7ft away could not get entere time same as in test on first transmitter Bhonograph 11 fraway Could not hear tune or all - nothing Jost with Transmitter #3 under some conditions as last Two SP.M. mith Phonograph 5 gt away from transmitter could just about make out Time Phonegraph 6 fr away could

not get entere Tune the Thomograph 10 flaway, Can't hear the phonograph

WE now have gold batter okin with Citale 4 pin wastern a necros, all in Contractile neagnatura feeld Ikin too tight not occutive but at 760 Ma get sparadio - Vibralan of light twice isome Lemo 3 trues its december Can't say where This Count Comes from

The point to move Mexicol ung- too much freches DE Counciled Deciplinage to Merror by a surple filore of self, Thes Then we swivelled the feel magnet a lettle to put tension of the number a deaplu febra

The trening is high 15 to 30 Cant say yet it heaves 5 to 6" - but unstandy a ar is unalcoly -The Sound coming from Siran Tuse of my lester frening 21/2 ft deway laying on lible

fremel 5 ft according north air wave dise ser second timing on Mile ampa

405 Wa tuning Mecrophone 6 cods Mulliple in pe 6 Coils Derivis Zeeneday - Big Output Cail -Mecrophone 3@4ft theor thras 3 & Revon Swen (2 holes) 3/4 l6

Tuesday July 24/17 adjusted gate 3 18" nich fram magnete phone. direct could just any of large W.E. Duput coul

series with Condensors for could hear nothing. Cut out pecondary and introduced from rad, carled-hear fork flowly set where could just make it and threel

Notebook Series - Notebooks by Edison Notebook, N-17-07-25

This undated notebook was possibly used during July 1917. All of the entries are by Edison. Some pertain to his work for the U.S. Navy during World War I, while others relate to ongoing efforts to improve the surface quality of Edison disc records. Included are lists of possible smoke and fog generating methods for use by merchant ships at sea, along with drawings of possible submarine or torpedo detection devices. Additional entries directed to William W. Dinwiddie propose experiments on the construction of powder blanks for disc records. Inserted into the book are three loose reports by J. Miller, giving the results of tests with experimental disc records. The reportably relate to experiments described in N-17-07-15 and other Disc Record Books (Notebooks by Edison and Other Experimenters). The pages are unnumbered. Only 15 pages have been used.

73498

Monte Ca,

1001 ST.

10 PLATT ST.



Zine dust mixed with a muching that will itself bown + 1 Carry off The white Zine Serpence of Medullis Calamin - ditto sodium to ninke puroke -See price of sold 803 for smake -Rig up with steam dello Conference air + forec Russelghi + other forders bound into an Trucke a smake Smallers Gurning of saw deed Burn Rosen - Wood las, wood Tested

Distill Sulphus Vapor come off or Condenses to Amonphay Altomogh Ferrous Che a HE, also ather Dults. to got black HS. found with air (contracted) o common with the H gum fully droided Derepland Hzat Zulkhume and tel il Dela 503 Kept for some lime

decompases gives fumes

Opaque sold a healing don't Musht best valallysee

Vapor of 303 form dense white draplate of 4/2504 40% of sog wheed is solid at ordung temp + only Cegnid by gently warming White Shoo heuted high with a Caristic Suda Dotation gurs sight Phost,

Thosphans trichloride Silicon Hydr. Le 5. Hy - unites opentrum fremes in cliv gives sunke of 5:02 Sulfhur Chloride fames That pentachloru fund Vary strongly Phos Dxychlorido from stringly Dilicon Chloride Jum Strongy Stoneyas Mix of Feel 4 Feels to form black sme & at some tum a spray of Sudon Delition

Stomige Oily with sleam I get Inglit kind for oil of will not Evapofate it will Coat the water pelicle & prevent Perhaps a sold like Maphthalia Rosin developed in the och or no oil & Clean Subdience Keetled Deauting Duper Circle of Oliver Howarf the legal sold being higher temp lecentle Decrees will larry it along - or the sale growing of deepor

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leit deouse Skorn (4 get thein ypeak - one you had hard Edge this lacted as a ving to precioud Cracking must get of again - - Load/2- square Thenton office 1/2 strope - Com Long from Bage civing serup + 3 med can be ad no happer of the good logs rempe Screen- rotated of felle with weighed amount parples areaprocaled up and down while rotated + at same time is operationally wittdrawn to off lead to deres before ratacing

256 sec Red Merates a loop between the packs of the facts lung - Hen Can hear the

uner Juse but twice

Tenhape alonginged poulieles Should be ahanged Electrically or one vera cetomique aproximated/ Agras palcileal of the south If-lay not los then, they would Exhaut Enthory of a 3/4" Just the White Shooplan with Joda heated or see just colort they to now Ohot put in her Fill 1/2 Reckber precas them 1/2 again wrubber precas Indant of water pumps Jake poewder Mex 3%.
Alran oil - dello ourleburger are worked by Motor or how of by 5/ - + wac ~ Wellow Could they work them

Dinwiddie My pawdy in Muxin with 1% Hz0 to dealing Elasticity of Jobre while General Mandelled Dut a Middle plate Baleshand H- marke Z Them 6 (auko Each time use 2 to print,

[ITEMS(S) FOUND IN BOOK]

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General Surfaces Good.
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· <i>U</i> .

[ITEMS(S) FOUND IN BOOK]

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[ITEMS(S) FOUND IN BOOK]

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Notebook Series -- Notebooks by Edison Notebook, N-22-00-00.1

The notebook contains dated entries from July-September 1917. It has been used in both directions. At one end is a series of undated speculations be Edison in regard to ether, light and optics, astronomy, electricity, electromagnetism, gravitation energy, and other topics. Among the numerous theorists he mentions are Augustin Louis Cauchy, James Challis, Rudolf Clausius, Albert Einstein, John Herschel, Lord Kelvin, Pierre Simon Laplace, and Georges Louis Le Sage. Several pages preceding the Edison entries have been removed from the book. At the other end of the book are notes by two unidentified experimenters pertaining to Edison's work for the U.S. Navy during World War I. These entries relate to "Splash Perallax" experiments at Red Bank, New Jersey, and include range and distance measurements for sighting of objects on Sandy Hook as viewed from the Atlantic Highlands objects at Columbia University as viewed from the Palisades. The front cover is marked "Aether." The pages are unnumbered. Approximately 90 pages have been used.

7341

MEG. STATIONERS, C. G. J. J. H.N. ST. AND 19 PLATT ST. NEW YORG.

in a preum must or granular because their could be no preumatic Colors of light was a wars motion the glass of the prism was Continuous de grandas structur with infinitely small grains, Days it ment be distinctly granular wither it 62 discontinum or not de its granitations not qually love topan in drawder than 10,000 of Or wave length of the Shortest wave of light or about 500.000.00. of an nich - Kelven says 200 to 600 Malecules in one word lenich dunt of doop beach 200 000 400 a Milmoles - allains) Experiency Kelmen lan Aadich of water was magnified to styre of the Earth The Melcouler outul reachy spaces greater than those filed by small shot a less then that falled be Cricket ballis - such w dot aldrements gives me Cowrage

to proceed he This Gravelation Cherry Toran Tallow Work

To get dispersion Cauchy say the mater

at 12 falir mean free path of Hydrogs Which has the longest trajectory recome to 62 20,000 mm - or a tenth prost of length of a hight course Topoco minitorockid Diaafa Walcarde is not the ame for all Element but average is alcout 10.000 000 Amellest Visible organic particle in 4000 mm, Dia 4 will contain . 30 000 000 atoms vorange in about 40 000 Moleanlan Number of Molecules in Cubic CM. stord teleps 4-foressore so 19. 18 oughts Maxwell 1 = 21 oughts (Crooks) not more than 6-21 aughts Kelvin -Daniels & 225 Days Earth is passing three at present Vapor of Teengold Eltry hydride wither aleaholic Our almos et decla n at O. slowly demets is loving + possibly gaining what we last by free fall wabven

No altraction believen makeculis (Bayles Lan) but by Compression a point is seeached at high presion when it down follow the law when near condensation to a Lequid all to their Except H, They are more easily Compressed at their boch Walton law, is deported from by a mix of gases condenselle with differelly Such a my is fruind to to Even less condensible than He Compount gaves the Critical temp is lowered Charles law not obezza). throughout the whale vange of Experimental pressures timp at a high precious any increment of heat preduces a delepropositionals Order of Buchley An ag Pr 72 Cu Pr al Z. In Ph

In gase the pressure deminishes about 273 for Each Confirmedo degras of Coalm The Court of O Cent bear the Electural faint Tolum being mentained Constant 3 Cooled down to 273°C it wouldn't have any knoke Energy to hat. Spechent of H is 16 time the Spec heat of O, to broug bath to Same lemps Spec Holer by along cot 6.4 all but phos 45 is 5.86 to 6.93. of Carbon Silven Foron but at higher lemps it recents 5.5 -Asubstance not allowed to Expand 4 is healed no interal or External work is done a all the heat gives to ruise its timp -

Dun is 600 times more massive than all the planets -See Bodes Law Major planets all move vinuend the sun ul the same douction Il to East Orbots are but tille undered to anot other All menos planets have same Comman direction but orbits have queder recentricity 4 neutral inclination. General rule is they made viruse In same direction of makerde inclimation. Exerction cours with salethles of Unauans. which we nearly surpended to plane of orbit! Salettete of neplanie & one Salellete of Dalwin, was exceptering derection of Mation tany Relrograda

The preales the distance of a planet from the Sun the less is the street with which it moors in its andit Grant bring Larger, the time of it Revolution to greater in a yet druger degree Linear ofceed afferous welly is inversely persportional to square root of the hern distance Keplan Jaw- Squares of the times of Revolution are persportional to the Cubro of the mean destances Under planet in Ency Brit is a lable of characturals of planels UP are perfectly opherical & perfectly Elastic, there is only I rate of vibration for all single LLP, aggrelates are many sich having a networker a low energy impacts all give one light, if impacts are honder the rate don't change but amptillide morecese Even the light which can just be seen has the full spectrum, but only a little 523

to visible as the the received harder of our of augustiliade increases of the ace more of the Aperture of the Aperture of the point 1st Visible more ace on the planes as well the young will use reach bryond the tillray visible but nothing has changed Except the brightness due to workers augustilialist.

The meason Red or yellow appears first to a secondary 4 local phenomena due to the Eye

The seperation into Coloro was to the UP impacts acting on Matter mechanically chapted to cause vibrations to be sait up in one side of a UP agrique before another impact reaches the other part

dight as fight down not go into the brain, it only Causes on istement because as can see pictures trighty Mummated total long after the light has cassed

The effect of light Excites a phosphone within the train on some substance appearing at the seast of senselion within the brain as a mound picture.

All merplanetary space headle Energy aton Conveyto by UP Poulls moving at an average Vet of say 186 oou miles see

These striking matter like the Earth are contrayed then the Earth not by malion of the per partido but by vibration + Exchange from Uplgroups lo adjacent groups until on the opposite side of the Earth the Vibration is communicated to a free single UP + it proceeds into obace at a lower sticed but in time by Collisions is brought up to the average speed of 186000 M per second some UP way by 200000 Miles der Ecend I some /2 or her mapoes a dilliclaser in the interstices of groups

. 1

The UP groups of various arises are free or the spaces of elivish Each group is felled with rapid moving single UP particles which can contra the Vitration from group to pace;

Enduilly the speed of vitration must be when it reaches to obsorbe ender of the sauth very much clower the late to per absorbed to the Extent of the loss of speed

Passing thru the moon the loss is small of the moon must be rather cool anternally

with the earth more heat is absorbed,

But with the our the loss must be great or account for the sum high lamp of being constantly supplied from the kup from

Mos of 2 planes both 1 wofe; "Timed dea 4 1 of 2 week dan part wit or formany like small one vould feared. Plan 10° after both work new (lace" Him.)
"The large both would still be read after the 1" work stock."

The energy of impact girento the matter at the sun of convented into Vibration + the outsequent throwing out of a UP with afface necessitates from the great Mickness of the oun that it would have a very Low Comparative Velocity lowards the earth white the parlicles from the Earth much higher the particles stroking the south on apports side or dark part have full akeed- Hence the Vendency of the Earth To move in a straight line by contrifugal action is exactly balanced by pushing it lowards the sun expectally as The particles from the our are very slower

The scriming action of the blanet so compound to the bun is small hence only the whole affect is not large but logether with the "Moon

3.1

well account for the tides talso account for gravitation

If the warth was worlded in abase + perfectly upher call and homegranous + right + going there would alway weight the bama

Immediatify screening coopied it appears and the boundardisent would continue till the Earth would be forced to go into a circle around

Me sun - Moris the Cube mot would wrigh more at 12 midnight than at 12 noon - because the Up. Coming from space are facter than from the opeace discoursed by the sun all 2 with

a single UP gaing toward the seem softpanding on a tron group of UP. I have the things of the UP VI rands of out of the natural the Earth of Carbelina with some of present increases he willist for definite parties in the Spectrum was as with I buildless which of UP howevery impressed of the found of the second of the house of the transfer of UP's received measurement mental of UP's received we received that in the is and to the second of the transfer of the

It looks as if the first compound UP formed was 2 + then moveaus 64 2 which grow in Complexity.

A 2 points of alloraction reamond hold a 5th as twoll only have by grand a direction. I all house by grands have register with hold together against with hold together against which hold together against

The next would be De This he first UP Complex may be the Viction but I think it is more lake 12. Hydrogen bung Viry Complex

The velocity of maler in Vacuo by opecat Conducation of power from a small surface could drive a UP Complex of check the best even if too of Vel of light the energy might be conveyed by Transfer of the Vibration in the Complex to Dright free UP + than brave to still feel of the particle of feeling a security particle of feeling to a security to uncountered to the still feeling to the constitution of feeling to a security to uncountered security of dends and leaves to the security and the security of the security to the security catches and for the security catches and the s

Mole. If all Elements are made of UP spheres cubes or atter benefits of may be their theorem deficient besides over the to their or the Vibrating times of each Complex when Street or rather to combe the UP sight.

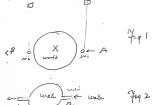
The Vibration time of the head. Complex owners the to the same as a Complex owners.

to decompose P60, Energy won have to be received to depourpose of to Ether free the groups, or make a new Combination Danhaps the vibration usline of mercase or deminders Val rate might 62 in Milphitude or area' subjected to UP Combardunt. andplatude 0 a single UP may have a deneral Vel of 186000 sec The 1st UP Complex would go slower because it was fromed from those UP Which in the general mass of universe made up af angle UP. This is MI 2 UP When this was Caught by a planet + slapped to Vitration + would be 1/2 or + that of a single UP

If bullet has high speed it gots them 1/4" steel is making no before or smally If speed to lower the fact to pain, gives dight a lead gots off or annoted with Spentherscape of Creaks of VEL grant it, penulaturally the Wilming if low about it was report of grant with a stage of a given higher a resource.

A ray retarded in perepertion of alomic wright, as it a high nate dight birrottom its only little light. He has more UP, on larger complex as to hickness, hence in arranging UP, to respectively the number of UP, their dispositions as to group the above should be leef in mind as to shalp edition to be left in mind as to shalp like X ray has to penderate Endunty should not be shall be they are un. all positions of littley are leaf. It is nother present the wintshaper of the actions of little wintshaper of the little wintshaper of the actions of little wintshaper of the little wintshaper of th

Work the out - Think should be worked out on basis of Cubes Crystals which may be implation of restilien-



If the one X to bullow ball & penfield perhardent, I start for the total perhardent, I start have for the transmission of X would account to the start of the country of the transmission of travel

To UP of exace Count born band the world trade up of UP Compensar when I love if spectated exact grant perfect

Elisalis the Vel would fall who fall lited almick at 4000 ft 500 ho 1 would as represented by No 2 want Rebendons as a storer again, any 3875 ft see

Fig 2 shows hollow ball with water paper the Vilvetty of water fitting a + emergent at b w orrest tille definent yetthe Vel of water in trullow glake in very slow-

Fig 3



Electric curent y a were charlected from a to 62. He curent would have a certain trial Residence of now the west between a 46 were cut out to a large ball of Certain marked the Section a b would have sionnously lass a borould have sionnously lass resultance but execute of the Electric

Abress would be The same



A

If a strike at 186 are Miles Second, is ball in 186 are miles of in the speed will be the Dame only a very billie of the war with reach a m 187 are on 1800 propagation of full of the training memory to full or training off like propagation of any Electric water. If there propagation of any Electric water. If there will be 2 second to the the warmer that the same that of the warmer that
3



The speed will all the same - wome - wome Don't of the worm well comin at "b in the Et Bood of the second but it will be very weak + the Tail but not seeme for Say 3 Second

Thus in perfectly Elastic badies - a stress of carry Kind acts Like Electricity -

6 () ca

If LOV hows a cold from half then at from a to b, it is said that the beam is reduced to half the agreed of light.

I do not believe this I do not think that any gramment warrants think that is a thortulely above surprised with this special count at a hazed on themse that are to the thortule apparent it is have don't have been that are a to be a to be a to the thortule apparently are OK.

Think that the UP, from say theodon have imprised on thom who was defined from the UR + the impressed work thank the work who were from dun to sarth many on allowing from dun to sarth many by collision import them to attern but the great Wayorly get Ilven from but the great Wayorly get Ilven from

sun to waith without Coffision or impart these wares to the UP Complexes, as their energy a amphibude are small the soon fall below nices we will when percusung flow 30 to 50 ff of glass But the great warro due to the Natural feered of the UP They willions of Times granter proceed from the whole I Earth without great low, The light wrons die impressed, restravión weaks enouncedy Compliantent, Whereas the UP of space all have a natural opened as local of the UP complex of heatler. That there impressed weres are Complicated is whown by the weat number of their impressed on the US: to give 3 a00 lines in The Oper troscape

ngoo son

If a UP having on it contain These waves will not spread out because a wave or stress is so small that Ore cause a want or stress to so small their them of atom to surround its summer in measurably alopped laterally or the whole train around me a stronght bline or the opposit faces of the opposit faces of the opposit faces of the opposit faces The D line shows this, The great natural period waves on the UP. spreads considerable, The wave gives us heat. The impact of a UP marcase with the amptuide Endrouslig + plasses Three Everything 4- 20 not confined to an applature of the olitto only the fine injurious over line waves that we controlled by the slet of leadings, So we wan see The phenomen of the Spectrum_ It the impact wave that produce gravitation pressure. The enormous Taped averline waves impressed on the UP

that gives the light pressure wave of it to this untalancing of the Egnal precious on the Earth by Service of the Stead to Caused the Earth for previous lowered the Sun Matallanced in the Central Present that counter acts the present of the sunder of the sure was a grant of the Egnature of the sure was the sure of the sure

My point is that a mass of Perfectly Eleville Matter would have a hadreal period which period or rate would be constant that corrying these waves in absolute matter free space they would contain force space they would contain for was going at a certain Vel should impact to another these vieralisms it could be marter these vieralisms a second with amptimed, it is natural rate, it could have other

warre impressed on it 100 nullion assected thransfer there warrs to another publicle

The question now aruses is this could a single sphere afmatter perfectly Elastic have any pairied of its own - I think it Could of the Wave was 1/2 to dia or something thing like this with like a resortator, any other rates Troot mulliples Exect would 62 imprised as their would be no low from friction in The Maller of the Sphere of on the latter was suspended in space free from all mally action at a distance impossible hence no radiation all these vitrations afthe sphere would keep up unimpared in amplifude forever

It is even possible that the cheed of these waves might be

Water might by even greater than the deced of the appliance dell Then absolute space, to that Light bravels 186 0000 Willes in a Scilend + is cornied by the US spheres mounty at Wait rate but auxpose a whie 186 500 miles long made of the sams perfectly startic matter is une What would be The exceed of a wave, as a guess I should say very much faster, mertia We must take note consideration in the Corpuscian theory Nat only al the particle movement but ofecultations of its mass thru warsh to0 4/10 Wir absence a certain, phenomenon by 1/2 Ege Wi call it light also by instrument we absence a phenomenon in we call it

radiant heat by another instrument we call it Electricily by amether material was easily to grant alone but it all bravels at the barne rate or I should, + all one the came

thing, but in this transfer Energy it Encounters matter of Yanious Kind hence we get Various phenomenon + we measure these phenomenon with Various metriums most renselving to convey the phenomenon to our senses -In all Cases the metruments used are accumutative The Eyes must be impressed for a Certain time before the phenomen aflight is observed, if the Might take an invisible star is My too weak we accumule it induscly on a whialogh blatte = the Eyal regum to if a secto accumulate I haat we accumulate by a bolometer or Thermounter both assumutation - if Electricity we accumulate Cay stormed in vion. or masses of watter both occumulative -

Hence we are all observem the effects or interaction of Que on Matter, clears out Me Ener All the energy is the unive - the bi (orlamally came rom the sermial of utlimate spheriuli showatter mooning at a Val Wigher Know 200 boo Miles a second or all matter in masser so the gradual formation of Complete of these primal ophericals to form matter of less apred + the morean of the Complex to form many of These into langer Mensen 4 do outill we have suns of pelinale attal complaxe are constant Gaing formed this Lithia Complexes and moudent, all kinds of matter as well-+ they are the meaning grangating with iron Zuc & other Complexes to form mater so called

That the Energy stored up in These ullumate Japahen culs her at these high speced through a Space unlimited in Extent on Sun fall other suns with the energy now ordure to space face but without unparment for Cecuitles Centurin + without force backet lowering the speed of Chicas ophericals Ift in a Continuy if All the power we get for run our Locomatures, whops, Ele is got from the Energy closed up in the UP of opened WE amply accumulate it by clow a roundahout methods + then let it return to its original state more rapidle than it was accumulated

All our Elements are due to formation of aggregates of UP, They form These complex are not special They are square but different shapes when 12 to 14 are formed from the surplist Compelex (2 US) they aggregate Luffardas They Start a new group still more Complex but the 1st one of the second group has a shape like the first one of the group Klown to ub Hypropen & so on for another group Repeating shapes Ever aroup. When conjuges of Chavama Kind come logather they form Crystalo, Attese are never Jallen call,

Asto Electricates it con rub a mass of portmal Complexes They our natest in Vibration But of we rub makeulous Compounds made up of 200 More termal Complexes-They the Malcentar Compelex are Il wown into vibration mather words they stirs up the Energy due to Nece Gina The Gody we choughed blu mubbing long , how that amplitude och these literations not bring transferable to & Cher matter mercasa Kind of matter CE and in dontrel The Fire amplitude is diministed the new matter receives Vitration of lower amplitude if the 2nd Gody has infinitely louge many of reduces the liberation to practical Zero + the small bady loses its Vibration only the 2 Gods are closed + 6 th Vitrailing at Same amplebude they the 1st

body has no more effect on 270 have cance Reite of Vibration trains acceptance on Vibration trains acceptance on Electricity, but it is only the same Attribution impressed on darger moses in the larger than the Withalians to eller michen the training to eller michen the training to eller michen its training to eller michen its training to eller michen its training to the same of fire michen its training to the same of fire michen its training to the same of fire parties.

Energy concentrated in matter in form of Vibration has a timet when it can be taked the state of the vibration to adjust the unforthing the Vibration to adjust the Europy or Vibration, If Condutions the sould to had More to a large as in a step on far so after dischanging it can recharge tock of like it will be suffer to will be suffer to all the suffer to all the suffer to will be suffered
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Its ocked is perstally 186 oco Miles Ecc minus loss to speed by Conducting lenauits, = on account of the comparative close oscillation in the par or closed ceremit on deschooging - The 1st descharge wave and go out Several Vious and myles 4 reverse its durection + discharge at the par while its being reachanged Athe reason that the opera af propogation is as golcat. a Leyden iar is an automati Reversing switch a chad than go so in one direction while changemen + when descho goes in that Opposite direction But there L' no Por NElec no more than a clock wound up to P + run down is negative

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account for Expansion at Contraction of Metals, Conquistum or allaquein

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Isotrope is probably a mass of say From UP Complexes at high temp or tombordulat which The highest are seperated in many mulliples, temp would expend all into the fundamental Inon SP Complex proses temp into douches authoracho Rubber soft 2,4 UP gron Complex at so on at Lawn Comp 1.99 there might be thousandy Evel Panatin would have a vitraling Time Shellac when struck by a sungle up Sulphur different according to mass-Routon Beautist Teach up would seckound from it showing impoured upon it the Vibrahung time of Chal parliables tootage, proceed Large waves of walles let the Earth thom the deaths of aprilee a for instance Each til Complex has its Component spheres as Cubes we control deliver it to 1st piece of but these complexe are surpende Mass Madles of Colhaled with in Exect at present temporations of or countless millions would the Earth Each complex to occupande Covery Evany rate the frank in space of free UP: Contand it to the new loss of Iron llenes in afocus ection le Complejes varies cotte the spectrum is accounter We temperatury at absolule Ters there is some space perobably I not absolute Contact

I do not see coly in UP. should not carry warm motion lever sofered althe provided man allow provided mand to a belliard ball by hit has paraller when we want for a warm of compression these warmes would continue for every.

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Sound travels say 1000ft ection the is Dlaw breceuse the war is belivein grave matter + Baranterio percuraria a distimbano of twomedice pecks + party Electic It secreds the water 4000 ft tracuse the Elasticity of altraction is quicker their Boroatelon secretion. William etel it is 15000 suder ilt account breame the Elasherly . / Cohesim is very much marin ferfact, But was that which your Light UP upon which is unposeere the wave may travel at any exced them de pace as it pares. Utra space void of matter of aughering to section it le cut when the UP strike matter it Das waves is imported to the Up a The Complex - Charapan an the waise at a speed defaculemnt on the Elasticity of The UP. which is perabably sufficement to give a speed of 100 000 miles god second or land - Atthe UP. Travergingapores hours of mount Vel of 186 500 Miles per second

when perseceding from the dun have perabably 190 to 200 200 Miles feet 5-cd beliew persones. rom uno ecupical obalec But when The Scribe the Earth They brewent the wave of vibration unpecared on the factice to adjaceant MR atthe Complex Hour Hat To free UP beliveren the Complex. to next complex a clear them the worth These waves throw off or branefer Their Energy to the UP Jump stace which dombar It thus in recound my from the Earth receive additioned unque over a above that due to Culling Elevition L. 10000

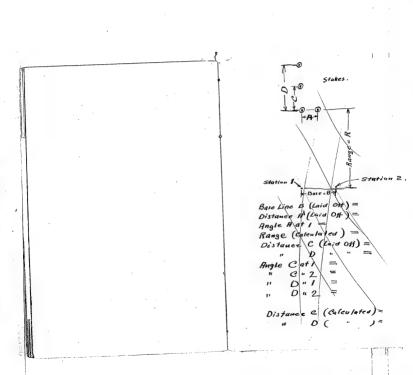
Necessamly there need 6% a stylet low of a lowering of observation the lowering of the least the pressure we seek frabilation + also heat.

There was no longs body

near leterthe seen learn 4 telaneti there would be no screening - the speeds manel by the volume Manufer of motion + the heat swould also be the same & the (worldwood) travel in a straight line It the world more and in son there would be more Evenge lad will, mas a it would nett hather of as lange we the sun it would be just no hat. to Asker Gluns Chesama Lu alles words planet Thru space have a lemp compression to their mass of Olf complexes -4 theo temp where to a how on Energy due to imperfact transfer (be imporety it elec. The imperfact Chausfus their a row at

If I hit Mc will hit N with a cerlain If A hit N 13 well hot M. but wither Che Mahit of Buill produce a stranger forcement on M than C upon N because the law by banefer turn M well be grecater hence N will be presented by work M more than M undle punch N

Expenses. RR FALL BLOOMER SOFACE .85 1.75 Por Tan - Bar Fact to Day & Retiran Fed Hante to Generalizant .35 To K. Stocker R.R. Fan of Supper 1.00 Trip in own anti, allantic · Heglolands & is teem, 100 miles .7.5. R.R. Fan 124 with @ 2/1/ . 2.79 Sept. 12. Pullman chain and supper 2.00 Sept. 12-13 Hotel Bill (Room + Occupent) 2.00 Camera and ground - glass 1:35 Sept. 14 Exten Ground Glass + cutting 40 14 55 artist, acaterile 15 60 a. R. fare Greenport & 4. 4. 2.88 Pullum .50



Splack Parallax Exper Stacks: (Range to far stacks is 165 ps. less them to for energy)

× = (7037) x 77x . corrs 12 33 160.5 + 7035×37×.00501743 22500 -=142 K. 168.5 y=10= 7035 x 183 x . com 1243 = /6 Shirt = 1(142) + (15) = 143 fx. Then check well with 168 + 141.5 Mers. But if want height is taken as 60 ft, then wike the lange to you fry and the distance, apply Bet. Stacks: - 164 /11

Range Measurement from Billio 7 Herisontal Angle of Middle Windows Next to Top Floor - He - Gar actual liet for more - it's · Actions lett. 5 If mad whight a comment of the for It of the proof of 1200 × = (7200 = (120) × . 20001243 160.5 + 72 NOX120 x . 2 200 12-73 = -149 y = r0 = 72+0x820x12001x13=74 Last = V492 (74) = 455 fr.

0 160.5.0

Station B. Angle of Mosts -Inches .0880 -087: .0880 aways lifferen pr 860. A=170 Angle of Stacks . autres Off. from Sto. 2 = 27 Range Alcasurement from Station F to far (Schmerhorn) Most. Angle of Mast-Height Inches · Hey'hir b lund. let. be and by it. 067 This winker range believe -CL 19 .6674 7200 and 7500 H.

SPLASH PARALLAX EXPERIMENT. July 31, 1917.

SIGHTING ON ANTENNA MASTS + ON SMOKE - STRICE OF COLUMBIA TINIVERSITY FROM PALISADES.

STATION A.

ANGLE OF MASTS - Inches

.0758 .2758

·075-9 ·075-1

Angle of Stacks

.0165

Distance Ret. Stations = 160.3 Ft.

Measurement of actual flustrain Dhotance Between Objects II + TV as determine appropriat Sandy Hook Testine Cher 14 II , and 6 tom. 111 4 IE. This is accurate to about 50 feet U.Geet I + II Helionette leadings shooting from-Llustana a determine by splash dong stark to 75 pl. up the words Proceed butter in 2915 feet .1686, 1687 .1686, 16+1arrive = 1667. Hence erra is about 105 feet #50 Kut 11, x vil College Mistance a = 1/672.1242 = 382 ft. Horizontes Cilcum X = VJ51 -752 = 382 - 1 5635 = 375 /5 Mediane as determined by spire and-Car willin = 344 feet Erra = 31 Fact From the may be put

Distance Calculations. Obj. II & IV.
O Chillie
Rouge Tower
Previous Strains

· Spile

b= 336 5.45 ·

3454.

X = 18032 x 180 x 0 x .00061

336 - 18060 x. 50061 951000 851000

150

= 330-47 X= 2945 Feet

X= 2945 Feet Distance bet Objects II + IX

Probably consent to see y'ser.

Distance Calculations . Obj. I + II. Down Black Stock. 1-6= .0151-.0130 =.0028 mile x = \frac{\mathbb{R}^2(\mathbb{r}^{-5})}{b = \mathbb{R}(\mathbb{r}^{-5})} : \frac{20100 \times 20100 \times .000 286}{332 - 20100 \times .000 886} = 1/5 500 = 11550 = 342 /7. y= 10138 x 2010 x.12+3 = 35 /t. Z = 344 feet = Distance +. Objects I and II Partially course + 20 17

Range Colonla tions Obj. III + IV Object IV 1° 04' = 0.01861 Fadian = sin 1"-1" sin 76 59 = .974+ Effective Base Line = b = 345 x 9744 = 336 Ft. Range Row = 336 = 18,000 Yards = 3.42 Miles.

Range Mensurements.

Angle Bet. Station A & Object I at Sto. B. Ver. B Ver. A Repetition 180 104° 31 75°29' I. 29 3' 1330 35 TIL 121053 TIII . Average = 104° 31' 45" = 104° 31.75 Angle Bet. Station A Y. Obs. IV. at Sta. B Ver. A Ver. B. Rep. 101 57' 78° 3' I. 156 7 23 53 IL 54 10 125 50 TIL. Average = 101'56' 40" = 101°56:67

Range Calculations. Objects 1-II Object II 0° 56' 51" sin 74° 31' 24" = sin 74° 31.4 = .96374 sin 0" 56'51" = sin 0.9475" = Sin .01653 FAR. = .01653 Page RATT = 345 x -= 20,100 .01453 = 6700 yards = 3.81 miles Tive Base Line = b = 3+5 x . 94374 = 332.3 Feet. Range Neasurements.

Angle Bet: Sta. B and Obj. II from Sta. A.

Ver. 13 0 . Ver. A 180

V

Repetion I: Ver. A Ver. 10.

Rep. II 30°57 149 03 Rep. III 43°88' /86° 24'

Rep. II 118° % 61° 54'
Rep. IV 161° 58' 12° 37'
Rep. IV 161° 58' 12° 37'

Average = 74° 31' 24" = 74° 31'4

Angle Bet Sto Band Ply IV from Sta.A.

I 100's 1' 70'80'

I 26' 2' 155' 55'

II 50' 55' 129' 2'

Average = 76°59'20" = 76°5513

Holiometer Neasurements.

Station B.

Angle bet objects If II , Aver. = . 0138'

Lyches , 01375' . 0120 . 0139' . 0140 . 0138' .

Black to the left in Helisoneter.

Profile bet. Objects I FIV Reer = .0166

Wack Stack to 10th.

Station F

Black stock to the logy in Helico

Splash Parallax Experiment hote added Sept. 11", 1917 Huy. 4-", 1917. Wenther - Rather Hazy. incubifica as western Sighting from Atlantic Highlands on Object No. I Objects on Sandy Hook. Louiselein word. as Smake - Stock . 7° confeel but Length of Base-Line = 345 Fect. Control From P. Cont - ... Garage - Town 06111 5 Preincrett. Stalo Objects as seen through Heliounter Oliver I aided by heir - Supla Case. at Station B. athilling -Shore Line settlement White Nouse Leaning ObjectI Object I

20 08 20 07 40 0 74 8 63 74 8 8 74 37 179 60 10 2 15 2 6 2 27

Notebook Series -- Notebooks by Edison Notebook, N-17-00-00.3

This undated notebook was possibly used during August 1917. All of the entries are by Edison and pertain to his work for the U.S. Navy during World War I. Included are notes on the way torpedoes work and how they sound, as well as Edison's reactions to newspaper reports of an oil tanker sunk by a German submarine. Additional entries consist of notes pertaining to poison gases, with references to the Watts dictionary of chemistry. The front cover is marked "No 2." The pages are unnumbered. Approximately 30 pages have been used.

Notes ou Tarpedoleeth -

First punion gives 2400 per second . Bevel gear gives 584 almost 4 to 1 -First penion 133 Rev sec Levitt Day's the terroine runs -10000 Revolutions min -Theo will atter the above Itshould Grat, 75 per En

Garascope Run alcout 13000 makes no sound after its Started but Compressed der impunging on the trette of a 1/2 dea apour grass which 3/8 faces guzo a high cohealle

Inalice in LO grad & Jumes tanker Sub gave Nots- Tunker 300

Thoo yard & less range Sub fined a torpedo it missed, bout Cophored german Capt said he Uset his topido at 15ft the lunker draws 15 he saw that ore name Janker Zig Zager although Lockmann Locas ahosing yar

uso why Zig Zag Mest of the leather was of 7500 years - elaned at the good. Duly once ded section het tanker of that ren A Seel only got one in

3000 Sec would renonant Colum

Irichloro-acctamiolo unstable, dont keep Violently alto-ok. Eyes +meno membrane. See what legued desalvas the most Alimmum powder mixed weeth TNT dette Mg - dette Zuedust, Pret Emale Can Oleum me aharpull-5% of the buck -Can of pyrogallate non-for semaka Atapar blanchens un air . Sho Oxychilorials readely polin deembod - to clear legul decomposity water in Paris 6 to 8 mily of sold water as dust ble Cubic.
Media 12 @ 3% will dust on sheat

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Cerum Metal berns with greate brillers than Even Respection goes off Energy than Mg Set off by friction - brilliant sports by striking metal with frint -

Sects decomp by water Mercuric Sulphate, (turpath)

Bi netrale normal.

Anteriores Chlorida B. trichlorida

Polassio-Calcie sulphale

Debromachrysene 273 Wetts 3-0 464

TetranitroChayen Well 300 C + delmales at strong as heat sparnely or wany used in see solven

Diazophenol Nitrale Very Explosion Jackeylene w Dactone large flame with montfunt but burns without delonation les lots charge and -Oxygen be qued for mekenny black Dunker Asserious dichloro phanide Tetranitrodenaphtlimethane Legiond Exerts a Violent Comorine Welt 260 C Zyo + oldonolin action on the oku scightly at higher temp-Westly 3-653 sol-anim fumes in the air-Bodo 255 riotalleres la Elhoxythiony Cheonedis water - (I aloudy) -Stiglithy furning (di gun) Water 3nd 1552 Arsenic Oxychlorophenida Crepitalini - WP 100 fumes in Read 3nd Rip water The air His Converty of to Thenylarsenie acid phosphany Tetrabromido a-Dindropnopane of solt Exploring - worth 3td 1492 suld - fumes strongly un

Trimethy Pulphine Chlorid 2 Witnophospheny lic con The Chilomater & Todate MP 132 Existe to at 200 C melt 140 of their Explode Water 3- 1579 Water 3rd 1849 Phenyphoophine, Lynd Aumour Sulphite - headed free O - mean Cooled gives offichiti vipon Look up the Characterine Ut seems that its formed by hegeling suspenses & Considerate Theodyanite, box 14 Ay Courterentines Phosphorus Peula Chorudo Laker placed & Sulphite Valadelyen legard allocks persons farmer in der-Combine with \$20 wants water Louter 3,1868 Propyl Chlorocarbonate Lebrahromo a achie Elle. Drougly allock the Eyes Odly of comes strongly with over Water 3 1676 decomposed by water Jetraitrom- Ethyl 0xids a decomp on Has 3rd 1908

Jelrantro-Authraflavone

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Frintrophenyloulphones and its salts Explands Vislandly when hearted

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The braffing allows it of several way of the several was a flast returned to cold to adding the several way of the several way of the several way of the several way of the several between whether was the several se

Monachioracedone legind
BP 117 acts strongly on eyes
Copiair flow of tears.

Dichlorance I'm altrocky nose of your with violence legal of blaten skin wound different to heal mind the State of the Colly of the Col

Chlorical actiff Ligner 13 55 fusies solightly in air Verbor allowed Eyes a scapization organ Strongly - Beauty water with great Victance

Perores acety Mick legand Exploder couth opened Violence to the opened on content of the period of the Market Oxfor repetit, water 1st makes the type

Antenny = Watto Val 1 derolain - Ciquid BP 52.4 C its Vapor is so intensely writaling that is face decope in a room makes Stibleramy planether insuffertable diguid-not spontanually reflammible Now 22% Les in \$20 - Resoluce VERY VINCID BELOW 200 un Elhar, must be fresh keget 59 1,333 at 17 It fumes brown eer us it oxidiges Strongly of decomposes to Unitable) NG white towards Drop on paper Expensed to our Chlomde Alumin. Wil 180 c Insolin H20 (Zepunion) fusible in Large nime fumes with any - wally I Vol bender Celminin - good Stibbristad 39-1.32 legin 1 18P158c. Nitroanisic acid Explodes mant 420 distalor Eller vaide Euch that white fume When heated suddenly MP 180, searely pol w with what strongly human \$20 Weith Val 1 302 Water Equin White paint Sto oxyche Court

Netrote of Hib mallightum
Criet - balt 20 Standy in APTE
What healer gives off What Frame
which invalidated to lake from
their hipelater with large
White Hame just lake at
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Arsenic Chlorole Butter of Arsenic - Turner in and BP 132 Evely in our at and temp Very to chargely.

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Aracheted the Drogen I gunties 30 C don't Comben world detake or known Executely paramon ergredited auro wines por hard in Mounthur the gas, (Cheap)

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Signid - 15P 133 don't furni

not become by \$120 die in it

Vapor of this Compound

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Minimo memberces on accuselling

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will up of percentar lectoridade

Jum Is falt before (Chap)

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Arsende of Teligh fee old ent a pringed suffoculta nather have gundel don't fore apoulouseely /unstaller) Mercus Level. usol 420 Sol- account we Nitrobengoic aced MP 127 Desportes sublem Hoc no revidue Cyanide of Cocady to the Vapors Exite Coughing Very lemit of porson dism 400 pt 1620 Crystalum MP 33 C-Backs 140 c Vapor 5-8 4.63 most poronin of allthe Chtoride Benzoyl-Cacolypic Compand BP 196 Vap Den 4197 tengralis defused as vapor makes Eyes wales - decoup Home air of a room Ey \$20 ground HER + Excites gidding, delerum, numbres Things is acid Del - all of hands , frest a Even loss of persportion in CS2 merollage Consciousni - These attacks (For smake with WHY) are however if short duration providing the person Excopes intime + Cheap-

Bulry al -Boron Chloride Legin Soil Monachlorenated Butryal Ligned - BP 141 C 17 c fumes in altrupais V Drenty 406-yield Held undal #20 prengent lear Exter: dis al-Dulphochloride Carkon Thoboric and theak vany writaling to the Eyes legued only funes in 100 c destills without Chloral - oil, alloration, highly Coustin 5G 1.5 Vapor DEN 5.13 Chars organid Loleien Exertis Coprous flow tears act on ahms caled peal Aco Borate of Ethy of next lang (signi) from aff colute fumion and at 200 C who acid rendin Contour weeth \$20 for Cheoral Hydrale

Chloraldehunde Lequid - gives off Excessive Chlorides of and radical mostly funing lequeles -(Parchloric acrd Liquis) fume, vary valitile 56 1.782 Junes densely white, due to decomp by to 0- part powerful oxider Known set organo ou fore materally smouling to certical Explosion wearly Equal to Chiopeole of Milrogen - 11 Very daugerous Historio Skien takes worths heal unstable also Containers cometin Explado

Chloroperchloric acid : Kar forms extremely dense fermes C- 921 -Chloride Cyanagan (Liques) attack Eyes + ware violantly Chloropicindegund Sq-166 By 1200 - altack Eyer & nose videally Oil newstand about same effect actflene Combun with Coffe + also Scor to necke delonaling Compound Bromoacelylene gas Spoulanced, reflamble Liquific at 45 lbs presun

for tracer in 3" slarger shells por vocace in our arguer ascerts for the both or bars showing fue leading to Dunde Chamber of black presenter making to grante which goes affoundatify at 2 or 3

Notebook Series -- Notebooks by Edison Notebook, N-17-09-15

This notebook, which covers the period September-October 1917. was used by Edison aboard the USS Sachem in connection with his work for the U.S. Navy during World War I. Many of the entries relate to visibility at sea and to camouflage experiments conducted under various light and weather conditions. These include experiments with ships camouflaged by different canvas panels, as well as experiments with painted boards of different shades erected on shore and viewed from Long Island Sound. Also included are notes on devices to measure the amount of light reflected at the horizon. Additional entries pertain to smoke bombs and to the amplification of sound underwater for the detection of torpedoes. On page 170 is a list of projects in progress, along with Edison's approximation of the "percent finished." Among the projects listed are camouflage, periscope sighting, a Smoke bomb 3" gun, an underwater projectile gun, a Lyle gun smoke bomb, and "still" and "moving" torpedo detectors. Edison's notes indicate that Mina Miller Edison accompanied him aboard the Sachem and that the vessel cruised among Gardiners, Plum, Fishers, and other islands, using Greenport, Long Island, as a base of operations. The notes are continued in N-08-09-10.2. Outline drawings of two freighters have been inserted into the book. The front cover is marked "Front." The book contains 197 numbered pages, a few of which are blank.

Dept 15 1917 Semiclandy day, whale covered with Clouds not thick, can look at our only for an instruct, some there patches all woes, wind, moderate Torrige vary free white cross but a small Livett rolling section 1/2 mile of fast_ Boards on stradow 243 are close mitual. NOI is the last too painted part of A02 is go/s lamplingk stripes 10% White lead olipes, matterdy Exerce Timp 80.1/ Black 20% collete

1030 am Cloudness abt some all boards lighter order of Shade same as at qui - but 5 is strade Lighter Him No 1 1050 - Cloudy - can look at sun sleady llow Clauds -All boards shade danker but very little This is our person ? shows a marriage l'ef light by sufferlien Cloudy tup - 1/2 way down blus Opals = by egione

2" of fuse. 5 Secondo - Oto 6 w 50% black it is perobable that at this how of Condition of cloudine that 80% white 20 black would be good moustle at 4 miles or so, 4 that

days + do considerable on both side of sun ashadows Could be made mumble at 4 or line mile Only necessary to puct rolls in partion when But not in bright Danger Zone is afterached lightgrant storm when submin Therefore with Cant operate. present til + mora Canvin ior are ok Roll 4 timbs 1: side - Dank buth roles on 55 Cloudy Days !! for the morning when in schadow light that roll goes on that suche & dark . Kind on other side -By Carring Rollo of 95 90 80 60 40 30. Rath Changed out mood or where Shadow both side WE can according to Course of ohip, change to out Sun on Cloudy Hazy Days

1155 am NO 6 by agriculin way down from Snellem 2000 It devey disappears -Still Gloudy - white caps East all over en sea Cant look at sun but an instant wind freshi Considerable blue aprate in aku West nearly as hazy no it was act 1050 alm about the usual hazz producing from the Island as We had in Expands - + much less Man with 3

1705 Moon Sun abs cum Can look & fift at I # 6 still Geast Visible 1 2 most Conspicionis -ply line is of Cours cloud Want of light secons to 6-2 Contralling factor showing necessity col 95% bluck to 5% black apparently the light in sity line cout che 12 15 km Can still squat partially out NO6 from suchem: to 2's ettle very black Sun absenced under doork Vhine it 2 timbs highler Whan to were used by ok 101 Any 70% white

1220 pin sun out uf black Cloud into white cloud NO 5 lead Vis by against 2 still Black Dinner 1235 pin Sun Dem absend by whote clouris -I le bust for murubility as sun gets momentarely brighter at line

Tomake all the shades it wants | Roll with 5 blacks whiter tents = · 100% white for 100% sterm white -1250 pein Sun Remi abscum) white cland can just look No 6 most morable still 2 blackent, yotour show

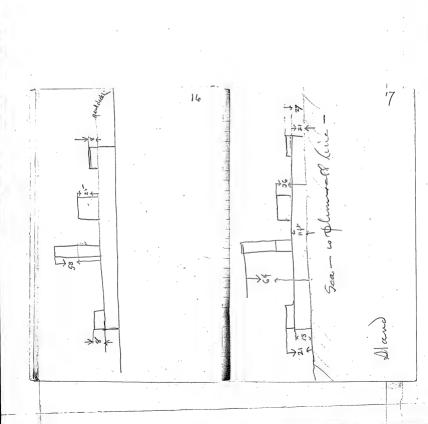
10

Uneight be called a dule day clouds leeck willing of seen meanly all time Covered with Either thick or this claude, with refts from druk to light Clouded as amountly a clean oky rift. but 95 % activities, obscurily of some Kund with 50,50 6 Est, aprentably shared be Ether 160 or 70 white white Cape look very

white East.

This must be due to reflections of Clouds. as fout as charge I pust noto compele mile what way to glit sufferin on water I dull balwares Do its sight with chours The fort is abscured . not in a Rift I pm reft opens. on Anti-Mr 3 most mures blo-When reft closer 6 is

under Cargo Boats 130 km Reft lighter No 3 is least Visibles its believe 344 Visible #2 Hackish-150 km # 3 6 Est. (rift) No 2 getting lighter No I too White motantly Champed to



.024 thick-Hard 30" wide 36" long sunlight only sectional Would from N East, 10 seconds then gum Changed by clo

 2_{l}

from deck of sachem we are so close len bloom /2 mile phly /3 le ballom parts of board have a sea sky line -

We can have be also pert are

Sector boat which 30" couls

Common along that well

Stripe, & Emily hermoreable

Say 4 for cooper herter

Lend - Stripe fortenent of park

Lend - Stripe fortenent

Lend - Stripe fortenent

enderformat,

Slanding on Pilet House deck del boards have a sca backgrand - in Coud hair afthe light 3 is Gest. When Sul abscum Coy a white cland so can just look at Dun Endlenly become lighter then No 2) best against Dea, agreents) copiedat ace it Another Change in light Aguest Dea backgrand No 3 most movide against sky line. Ho 6 most workle

125 ft of /32 Canvais -024 thick but allowing it to be 031 thick ralls of 4" ralli. tight will 62 8.71 meher deanile probably with creases well not Execut 12" should give 5 that 25ft Euch high from deak to Movie Queche NG wents 10 to 15 times as week bount at once to dominal quad, 30 tim

7.2

Wind fairly promo breage.

No cache Cape sun Relung.

(brue siefls # 2 board

brue siefls # 2 board

brue seefls # 3 45 per

u 2 second Nos 14 4

best as cloud parama

The can of ail with one lettic dodium in or Carplus to oct it in fore K would be better,

Can of aumour battle HC Conc when bomb bush gives sucke or Rags snoked in 2 each in battles, ditta Kisselghin Sooked in 2 rich -

Chlomole From Can & Black

Conc 40% North a Mong Sol pyrogettes and

Barrium Nitrale or most solveble Bacum Nalt + H2 Soy in suntiles Care or a very salueble - Seet of 12504 -

Concentrated Dal of Andre Horck 4.

Dewaghenglendran & Soda - 070 digis - air-

detto Paramidophenil-

Anhyprous Hel absorbed in an ideal of or other non water and went into which is painted common on whell bursting the ideal a Evaporation. The gases on these in white me the gases with the continue on Whype

Think that anhydrous gases absorted in an abilitate Votilele lequis, will do the trick as the gases radel only Combine to give solids from water in almosphers gaves will remain auspendia Hill Enough water about & give the sold by Combination -The mousture of the almosphere to four the Could in allen Der cohat anhydrous col 503 is appliable in -

Think the Good should put say 9 Complement of quener on lovery Courses all the Camouflegan departur -Over atest Eyz Vision on German Submary Man standing on top of the Couning lower is 16fr by difficult for abservation but for Constant observation of mean standing on toof of Tower to 13 tf, the account I have all along assumed for eye Vision. The longest surraps is 26 ft from water himthe poureofs to not more with 6" we drawning, proceeding 5"

The courth or drawning of Towns to 10 ft which

of Towards is 10 ft which on love get mark

The shorter serverage is about 21 10 22 ft.

I notice in Board tests.
Standing on deck 11 ft above water that 1/4 of the Cottom of board was on the Sea buck ground

In tests with 10 boards
measure this exactly
when bettom board
of free of sea back
ground- Observing
from 192 for fund
test but from bodya,
at aller time

With Convoys- the enable of will be notice of persone of Trapalips.

Por Cargo docts, If destroyers reached by careful about on the careful about

Our war mutts about by Camouflaged above better, The furnets so znemy The bust plan is for Could not see from Cargo Costs to Keop their must our aliga apalt, or destroyers nom a distan 30 min steaming time away a no convoys Roughly regimes 21000 yards 10 tuts Tonpedo bonts. for 5000 ton Cango Goat Shared be perabable Cost for Canons \$ 5000. \$ Camouscope Canoumeter

36 10 min slow all Time My watch watch Passibly WE Can 4.30, am Rosey East, stans week all boards black aides then mislead of Changing Rolls from Can see that 8 9910 nat so Clark us alhens Rose Extends Quenty spide to shad Witch Milwing Mywildh 445 am. (m Its. Light enough to 446 grilling VEry red

Sun just a little to deft of a right of lock Boards still black 89+10 show lighter Can certainly use incomediand leght. to dies silhountly Solcher Stern pouts dead to boards -Cun see Plum Tolqued shore plain - dello on 452. Can need fine print Causea I star dead overhead Canquet ace lighthous, tower dark-(act de Manas Cristad plien Island Light Coreia

Dky overhered seems clear. get delong horozon there is a coul It is gland to be a very Clear Lay 17 Think -Land on Every side Evenin distance is plain weth Eyz of very lattle huzz although sund is not Its The awara is now very brilleunt but can't see the light house on right a long destrum auskey are light, 5 am set plui Ihland Light Conice with glassin Board Piny Clack sky line un aurora van Turn Underton of Dock then

5 12, Kosey ford rung out freat. derly then clouds chan faint reed Vien - redder, thin very leght sky 8 9710 commune to show afore yellow colter A-very defore by a familiary of can see they was whitesh feell Eys but danker Chan House on Seem Dilan White, make so them se ky dene -Sky Line - be ok on sun sedo 5,20, agrunt shows 89+10 much better - unclinal squart 5.10 am sun not up get Thou deaded cohite. Boards dank but can ale y shows dark I woblack tent 8 9 + 10 yelling: 5 22. Sun Zage affer much Engliter -5.07 - can sec. 8 9 7 10 are white them glasses 510. dar alerie gone. 8 940 retting much bogliter 8910-5 quents decededly but much dreaker Those 525 Sun all about horogen hand to look at very bright 2ky lune yallow. alrowing rather clear

535- 8 9410 by Eight look
white but an too dankfor
Degline - The key have
televisin to make too yillow
we not whiteh - if it was
we not whiteh - if it was
they could have been aguiled
they could have been affected
here in have
treach new harbourfels
(our down to get yellow
of thrown on ship as
Long as sky line next as

at the bafora ten use according to persons the bafora tren uses according to a personal treat of the Calor bafora trender that yungar the website lovered by the treat to be the truth Can calored be averence with Incomment fast light, to give owne calor as Austra world time after own in up

able to agree away neach attle Entirely invading neach on account of yellowed objection of the parally as only need while parally as only need while yellow shall go 10 Can have yellow shall (2 yellow shall (2)

Lump fant hight will aid The last part to make all white Can be truled yellow-6,16 am stell not Enough leglet on or perhaps all the white ofter-106 Crempicaceure moranuora yallow till 6 20, Cant see any yellow lung 10 is Early morn aurima to sky line, hence I yellow high frobably nat necessiff to wants Light =) with hale in paper all boards are downk no diference between Cun ace with glaces that Them with Open Eye you water Light house way off a right the or hander de order but as of doing bounds do it against sky line they sland out all relike of Lank.
Dkyline getting toos yellow puelly cleanoky lading but Inthe clouds and home horazu where seen shene It is doubtful if yellow hint while primit on browner will do, it seems " Crowy to be want of light + perhaps time at 605 yallow tent almost gone, 5ky time Vary bright with · light wherem white is puit acen mearles Light, perhalps Carlo

630 am Can now notice that to is getting more light + oquent shows the deferent linto afall viney planty but very wesatesfulin 637 - more deard ad Change to the tales by squent Thuk of there was clauds overland the 10 would be OK but sky in blue overlies one donde to reeflectlanck en # 10 it gil it light from vecfledlow from absiles which his slight malls 1" myle supplied (they little wind) who clouds on course Clouded sky line in the court lacks of work (10)

720- # 10 too dark yet 740-10 getting Galler, quetting more cabile a skylene Galling less tright -Very deceded dif in tind from 10 more Compressed as t awant of light, whereintoo wenderlight is necessary to use apprint 805-am- \$10 Commy Moser to trut of sky Lefue but not light knowingh on I 8.35 - # 10 hasn't light Euragh yor best getting closer to tent of sky line

8 37- perfectly Clear oky I think on cloudy or semi above - the clouds alone light Claud overhead Energh Oky line highet well excled back on #10 to do the 6 center by y to y 30 am beet at natice dark sky lens them q am not enough light explication back to be in bright and aky Line -9-20 - # 10 too dark yet not salisfactory Outhe bridge = not a single board has the trut of seal back ground, #10 too light I har as we second from \$ 10 at present alreage at light reflected I too bluck & none fit. from I duray get drocker Execuse when I agreent it Luwer down setting on gets drecker - walkuds out Olern 6 has a redemblan the stronger against quething - sure Sul well have to come to surface

gra are striped from our am side to get 1647 g was simper cet & to or run peruscape way up as about beineape weell 830 - # 10 cs Garage Stripe outside Zar 3 miles 10-17 all - with stranghing bleece 10 am - now 8 9 410 shows now Ok + well pecalicable desappe Ok by agrunting Light Can nearly wepe theen out my flesy blands over hea requesting aliacong they wel nothing but it serves and Late of suffected Light to highed Jup 8 9410 sitting down -Think this is enlinely 10 42 ain - 8 is least restle due to these clouds) reflecting back & of by against fleccy clouds in Torces no clouds of According to this would be will f fleery clouds courted underfudying for want Mutter well take care

52 hours it fails 8 hours of 32 If no clouds overhead it well not start much of 1 7 hours of well fail This may not be affailed by 462 hours OR Ralling + 6x8 riveros Micoo Evidently some reflecting a strank 20 ff long- along device wheat 62 device Cabin Vary Gright to get on the andard bout wohalow Think 2@ 2 = width of shipes in widest Olivered use law would 1050 Jamoet morele 68 better making better tint Close to with glass of celus making necordinent of hullow balles in fact I unch would by squant -68 Of of Contruction of -10 tul would 62 mavement of 1/10 of wah - East time -1130 - 6 best, sum unes Cloud can look of sun

1957- actively-1207. 6 besterm we floory ch 12 20 km 5 is best sum much specy clown beat sky very bright, sufts. 1245 pm 4 00 Gast getting hazy in the west at horagon - Wight flesay clo the wighter spale small In nearly Every Can 2 much sweet To Encline are of one Gan seightly belly than the old Oldering range of 20%.

1250 AO 3 GENT, 22md1250 2 fm Now 105 62mdRife in oky

As the only hight is white
with cloudy hight blur - perhaps all the

Ho the only light to could light blus - technaps of the colors of war some colition should have some colition should be and should be match blue of shy him.

To woo see the Rky in Tall along East so tall along East so to we have to Couldness with blush sky line out they blush sky line out they blush sky line was a some control of the sky line s

Constrom, net sky blue but trugs of funds = 7 best sky went

1 10 km - week cloud now come

out - 4 is 6xet - 5 556 146 pin standing on If amy blie is to Go used pelot house ovider-I pecaleably should ba 60 and against seal in every calife strenk or Seperates - 1/16 or kear winds on shutter it could be but No 2 2nd bust. ou 2" white about 10 dings 1/64 wide - perhaps the live 1/64 wide - The Grand also when the bright + suite hope. Inow Chink sky line at all 120 fram Yany Hagin west true has a linge of this although it look white Very clear East or duty white of This west 62 provided for For Rufts in aky all chilles should be 17 fm # 2 GEst 143 200 Cest. Contracted Electrical so change be made

Bow Rudder Thenk 50 50 should have a their strenk of 6 hur in cools of then-same in waln't + black Keeping of ef colite plus blue a black few blue som When Equiling of 2 is Gest there is he during bluehor Grown which of there was then blue slient record unting on Dust Home 19 th align then only Cleavy clarks whith Hoge correct it or give it the Clark Cart of the Oky! Sachen lift faut for (recupest of -418-418= full spen neclards concluded 55 pm. Boards ou sea backgom pol best for this. East is no Clouding up, shipself autor line 3 ft above top of west hazy - affairfully (soon). 430 top of Gownes Just ber ber 4 42 No 2 game Wirzak dem still builde a thick som af with

447 Com just see
how 142 in stight

guess wholly in Ekylin

450 - Ha 142 English

Ha 3 almost game

451 122 gente

455 3 4 142 game

6 oweds allower

horoga 4.57-

5 km 4 gom -Still cleave konogn sachen sot (159.71 Knot ace gone m 510 Looks as fall was above Sky Leve a lout out by count of light tnot lane to roldental the Farth -

1000

East always clean no hazz but west of

No 4 went at 8.8 miles 9.85 "

Jest grempart 1145 (Jock)

probably- 1150 full apre
probably- 1150 full apre
probably- 1150 full apre
probably 1223
1238- all virible Except.

NO 3 family virible
The harps is very shows

Loday borogon blue

around horogon blue

around around around as this around around a blue blue

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HCP auhydramo at 10 Contyrule o liquifier at 40 almospheres of 1:27 1 at the Combins 3 atoms \$20 -All lequid centry does not attack mg Zn or 7e with can liqued Animous Bawgun Cantire WHY Starm gun Hel both gibes fog groben. 64 Elefusion by ween well go WHICH fog. or boll Can be fore from one proposition

propelile -

I note sun short on boards the source on blues tint, as our gets lower 4 pm Visibility shifts from # 2 to # 3.

Its wishable NO 2 white white the the the that of sund blue as sund blue good towns @ lower 3,45,5

Aumonia -Chloride Animos Valleyer by heart without Runkin Rays wales Carried along sides of a bost 10% Wense stall Hydrochloude of Hydroxyland perdeably to Ido the big 4 Welt 100 Cent water at have goes with, the float a works no nonce Vun lecomposer with Vialent Evolution afgas uts N Hel, H20 & M4CP to Very sal in alcohel Speed Nto 4 0.76 Conderen to degree at 50 cent the at O'C 4 alness 28 e 10 almos

\$20 absorbs 1/2 its weight 10 ft Chloride Animo reconeto Valleyes by heart without Rucken says water Covered along order of a boot 10% hence still 10ft is Encert smooth sede Hydrochloude of Hydroxylan probably to Ido the boy of water of have goes with, Welts 100 Cent. the float a notes no nouse then lecomposer with Vialent Evolution afgas ents N Hel; H20 or WH4CP to Bry sol in alcohol Speely Mts 4 0.76 Condenium to drygues at 50 cm2 -Harcias at Q°C 4 almos 28 e 10 almos

Exents Lyle gum Sept 19/17 71 4.4 385 1) series 945 700 156 511 41.30 235 10.2. 15B 44 203 160 5 9 7.3 35.30= 18 B made of shelly tubing 18" long 35030 1806 252 440 136 ged bath onk + files 18 3880 355 15.30 no ROPE USED 41 30 142.30 - Series) projective count von askul was 3 let life one week repenter on Tall shot tall fines, of lumbed a went atmosph Large Reg Lyle que black pawder in ignited by friction prieme Aserico 916 240 88 10 A 510 129 11A 42 30 3 41 30 530 131 4130 1550 224 912 13 A Shelly tuber 19 long with a and

21st - Suchen 200 ft away 4
4 50 am awara 20 ft above
bounds - from Loans up to
20 ft it is blue to horogon,
walk showing frunt refficient
from Laft to glit from
Courara

Can see 10 a tille lighter.

ArB yellow pure just an black as The celliers

I now can see to write, Clouds all account horzon apparent

5 am 22 amp securching to Theroconon Goods of fort Dan see Light on Every lead of 89 410 Very trylt white Covers cenale 38 ft drawn.

Now gute hight on ship, good light leven in good checlow from Colin which Comes from the Western soly by reflection No are light reces!

B with Eye ahows yellow A don't to the aughe pershably

As it gets lighter tried are light again. June 5 20 am - dight from other only just persequilles appointed than the John from local acide. I be that from local acide.

No 3 Blued white part same black as 142

Both ArB very rellace of destructive from 8 9 7 10 which lash chilish -

Heighene Court being so Englit # 10 is in scherp to thousand to develop to the total out of
devora up hi phus now quewely gour, sky line at boards blush bolito-

There may be some show for Incomment foot leftly in early morning but none latter, Even and to doubtful but Bouldly and a 12 aup lightfor

Every 100 or 200 sqs fest ornange) sede couse or no foot leight might clo, but when sum get highly will need win

530 am den up one deamler Becounty Visible

is so much brighter that it is clark softwarter blund Cast. to sky line 10 Wants light to bound out of the thousand soft to bound out of the thousand out of the south

Shightest squart blackens 10 button are difference believes * Eq.

No doubt that for shadow side puses white paint is best and early it must be Mumin that a taker at rowerly elemented will have perocably until human well do my good by at sell

to am lant are them is seen on account of hage — West play all blunch or harry y Cam post are hand on right aide with whited are best mit worth glosses Lund newwest own 4 near also principality 2 @ 3 miles —

The day is so bright now in

the East that Even 10 only shows a tent of white A+B black with

Everything in haze zone which to one Sockeny West is more than 1/2 The horozon could ace very little

Even lu 2 Garago Goo your away look heezy - 630 am court see Plum Irlam

Strong Alhacelle June is due to want of light mach

* Drabably Iceflection frommy & evrylling on boat

The little test boards on smaken if held up in chadow show fine your nearly same as sky line (the white . 3 or 4 blue tinto therefrom_ Munumated Continuity by sufficient light but the moderant I make Them in deeper shadow (Eig oraverning weith the hand they chow dark softontles cognist sky Line -

9 am all boards still in Selhamella but not so sharp 10 is a our what willes thein

948 am - The treet painted A+B with lead plaint of just of west to No 1 very distinctly white. + is only slightly in of hourto slight fleering clarilles East to overhead 6lus from there went, Assparantly a strong ellumunition would make t ok by and or mirrow

10 am can a nearly squart out ATB pointed white (helphunt)

1024 - ATB peus white at present Can mary to a symbol out a now Yeng Valencelle - Liteller white think

which floory sky 10 am it would be of learning while 5 to hours dangerfour times with worn that ar senty house whele help

There is a decented gown believes Borningh

1040. B can now be enteredy of which and the columbia of the angle columbia to favoro-colle them is trues at clear ight complet ly between bell constructed thurst blumb speaks.

Note. Whitehold produced toy
Martin of green 4 red - orange & blue.
unllow of violet,
and watto dight p 649

I note them glass that B is not a seased white that it. Creating a probably should have 3 look to whiley dover the yellow then it would squart out 1/2 hour earling.

1050 \$ 10 Cant be culindy of with and yet although B. to princhionely gone without agreement.

1106 am I think I nation a change B o getting whiter than 10- A is still OR for writely due to angle writed by probably due to angle

11 10 am 10 is better than B B getting Too workite - A best yet. 1114 NO8 + A best-

Everething Changes tempoli now as sun approaches nieveded orqueak adjustments will howa to be made, Every 204

munites -1117 - # 8 best now - A getting white

The large angle of Goonds to oun don't acam to hacke very much deference in time of chaping only question apparaully of

1121- # 7 w the Gast.

4 withe best 3 best, Then how whitely

80% White black Cohen 80 % White Illiam is ok

1-57 - Mag best. Sum is greatly absenced by Claudi ets happy or galling clark in the west - Very by B has been too davik wheat

Deen was bright (1) and family bright seen t no true taday her Gan real Gright - The

Sum is so a brewindley where it is at 210 but day is dright it would be called Wedenstell ('Couly NO 6 is)

A concertificated and 218 Macket Violate Walch 9 min slow by Hanfords at 210 from

My Impression seltrat
the shade of cultranion
should be 2 shades
deper aprobably Coball
Blue is proper the

many Event three for downering is both than black on this fire fund Create isher skyling a board were perfect, the pount in the work board starting the workley demand and kept be would get to was fare to ably harmon the was fare to ably harmon the right of ghit for to the perfect of was fare to ably harmon the right of ghit for to the second the seco

Derhaps for winter present
When tent is deep
Ennyth as its slanks "
Library - Le summer
a clospe phands Camel
by were
No4 is shiptly lifter than
A set 220 pm but up thick
Assert 220 pm but up thick
Assert 220 pm but up thick

Compare 222 A010 best.

A + 12344 look black beet A still has a blinds linger Very head of glass-

2.41 km 5 cs 6 2 st.

44B look alike u shade 1243 very black A Cour nearly 62 5 grunted but

243 sun now shows 123 dentes A wanty agents out 245 - 3 equints out better Chan

A A General to Reduct violet.

2.47 3+13 best A promunt color hasselfy letraman nat deep enough for scrong light seen covered the clause accuracy light

One Cunound has about

| dull on one side no Endo 25 95 ft + the other 1600

Agr ft to the Camouflaged

43 section 6 × 10.4 27

forthe allersee how word ends (ake

Warme is too hight Cut not sure till & get go or 95% Com A in siller parel Las or part not dry last part 2 or 3 Charles deeper Colon No 10 is now go of white 10% Whamain 'blue B is DEad white, (Lead) Sun yallow 445 pm -No 5 is yellow A witnessen 80% is Vidlet walnut to Have national night along best in yellowsk tinge yet sky line is precty dans blue

head must do something bry Alumm or metal. relatte paint-5 pm - A violat 1 very Clark 2 black 3 dank 4 dank yellow 5 very yellow 6 lunge yellow 789+10-less yellow -B nawwhite we white started for gram port 504 pm 5 least Vaible, sun gellow rad only seed now by 5/10 6 gone 5 192 647 1 5 16 - only \$ 9 10411 visible

5 23 any Har Busselle Dock still Visible man other 1, z flash up 5 25 11 ouly unice + Nine of at Caribe Decle gono getting buck Dean with glows A 1 2+3 mity 4567 Cantlean of our Lower but chulk nat -第8910411013. 5.26 - only an accasion All gone with Eys flack of 11-as know Example of the temporal for it at Engraph fort, which elem to lack. Now glass -Can entirally le a seen suit 5. 31 Fort gone with glaves net and it with End-Change as su 5 82 fort gove -Dockvisle

but its evenly BLTE.

Went on Recurpont startest Eigen tell Open 225 scent Reo pet 112 mem sounds of half of the Revention Court and belley Observed get only /2 left of the Ceptain of Continuous of the de of Continuous o

(very yout change in Vaclamen With Eur only heard Eugen a little -But the whole boat range badly - pared 120 my call the rapes care in Vibitation With Bell Magnet lage ou Cuchion on Cont + Halage Cherolion, the morse was terrible but I could not sucagning The periodic name of the Engine, Endanly The noise your due to The Boat for Communical to the Bell Wagners

Instice that the bramfrom the luna grows shorter and the aught changes. which is 42 make Inotice that the bevelled Edge of the mirror Ahrows a very brilliant

Streak of light many times origited than de queenal Menor-Elso I notice threat the shong scafection of light know the alouds wholeficial on the board which viewing end on or at a look angle from board is as should at the General Escal but Viewing sound in front Cantace it tolay.

Draghragin jarring it willis was amplified also I not our waver Kerry took decephen out. The noises was then very week but could hear the Engine revolutions the noise of part from There should not have bean any noise but undoubledly the ween magneto was jarred to Englis a this amplif good the Engine norse HE will but dearling louck & belief cir holo to seekow much ducto air waves distinct from for

Cohen Byon Yoult is lowed Chere well to the may par Amount Ge par noise Commented from the Kull of Goat to the water there to Wagnets we will be just as bad off possibly for magneto was trot close to the shaft or Hound brewing or a deciple factored to wanden hull a anymite adjuster close to it, with the wave would be generaled en the pame cercuitar & alanca againet three from Porgonbon Eller at upot or output coil by paying out more or kers line the phases could be brot to neceleptyation - as one would be local + the

Consesponding one lag

/2 a load of ength.

as Engine mokes of Rev per
Second the wave in walen

would be perdeally

1123 ft long -/2 is 591

so line would have to
be pend out 561 ft

to newlralings, the boat

Round or the Volume

from local maquito

Regulated to be same an

ferom Byomboat,

to 20 am Sunday 23 9. Clear sky Cumbo Clouds in please in trongon

Blue B

The while of the sky Except a once to see the selection of the sky Except a day of fine — what one was Not, deep reliantly of reflection how one horour but although any complete the later but the company there want to be clouds to the thorough the thorour must to the conduct the thorough th

I notice in both of a boat way out whose such shows on Warks the water heak during white no blue on green at the 6 20 cm angle

(audor) (Byon

X o ome kew of schene as a Rejon warier with Conding to box obmited around it.

The favor of boat sends ware and some warver into cure and some warver into cure into cure into cure it while the wards.

The kine beauting Beyon a let out till the weaver are in opposite phases, the box is expensed so Valume or strangly a same as Tayon phone is same as Tayon phone then there of lines by

Dilence as far as boot sound are Concomed - The Byon will then becover any authorse countres of Good sounds It oulside sounds act on I half of boat then I will be necessaring to connect of or at Engine where action waves comfat reach, Nevenen thinks this will work 5 m 7 73 230 Vany Clear day white Shy Lin Contry from Grangant + just paran pein arend light hour with Eys NO 5 bast me mile away it is Garely Ves deller fleering clouds in front of dup - There are flac Olondo around point

102

Va K Courts Clave Lower & Ky blue colone free from Claude Under Steel and Steel Stee

A - 80% Whomen wife says is herender - to me it not blue at all but a red whitings color of undetermine Character it. Color stammer could clear from the alter of baseds blown down

NO3 which have a trings.
of blue with walnte 80% Heads
ho least Compensary 1500 ft.

Otro the Color of 3 base a blumb Court a mean sky line color then any other - the next one NO 4 is yellowed white

We should try if we can hear a bell from Byou laying on boat Engine retapped + time New scenaturing.

Resonator + Them stand Engine -

A Rake Byon 1000 ft long by Ignor of dustance Cospering Engines beaut Doubs are 100% on a line 100 ft long then on a 1000 ft line fot will be reduced to 1% or 99 lines Merium Liques that a 3/8/ Ouroth representation believes tools to believe at 11 Known 25 as ft doing at 11 Know per hour wife have a Pull at 189 lbs and the Bugan

This will have a pull
of 49 lb'Nermin thinks of boat Twine
Rope Strain worked it
moreose more than
15% as it would falled

The wake of the ship which is line of to rest

Jull on rape is directly as to the langth,
2400 yards 540 lbs plus

Fo lbe for Peyon

Norman day of Rape 2500 ft or naise 100% attend of 100 It have, the noise of 2500 feet be reduced .16 % 800 yeards-

Nomen feque 800 1000/ Haavy overclouded all over no sun can be ecen at 800 yrds Cargo but light is excellent oreing Good only has 48 Second querdley defined all 2 1 lum to length, at 1500 quest have powerful Kite ridder over about the same ok at 15000 2000 yours The 12 White Coards. Jonpedo 50ff sec Congo Goat 18.5 do not look black at all but hapy white 2000 yands Byon ot a distance, When 1500 800-Suchen staps at the usual place 1500 to to dissumed to Vos 1100% Head 2000 ft all are white

It is different to say here
What is needed to heake
them weatch the sky here
but theme should be a
little lighter it would
only redyname No 11 which
is the white to have a
very small amount of light
to be squared out
to be squared out
or have a folio spirits
or is raw of blue spirits
or is powered width of

that the more clouder to all over the more general

of the sums denset rouge can obtain an any refer to themes all so defined the first are 10thet Even in the recommy is able to almost by onto f sellhounter best would reserve ome are hydrog carnot of tree was bytaken clarity

It is periorible the Eastern Dide of the Concepts could be a should too be fut or would have to be farkened cultivary. We light occurs to be about a levent of a about a leftered of whence to be about a leftered

8.25 Am NO 11 is now I wantly like the oky line This is the pure white our

110 Downedy any hazz. 850 am all disaffered Except NO 1 4 11 546 best Lout hours to squart all Jour Can see if the support whiteel 12 is against the fort. The light has showere 20 - 1 bit A of 11 which is occre lockate are more consticuen brown increased light while the others only leaving one Coul of Johne does the previous black stripes are not pour cohele Theoley dene has no tugge of blue as its propably all cloud The chocos in cloud, weather the shutters from 8 am wok forall day a

light coard only 60 records) from are from 1430 till

of am Sun is chowing (vere family Com aca phen on reference but court acc courts one of 2 the looseds not sure white are mouseals

9 10 am - This would be Considered a fairly light day one can see where Dend is be The Clarks arrespond to Escure a Little brights their these further away but that the but that the divikest lichite.

The divikest lichite

Coords are not becoming whites but only

taken a elight squat to weakelliem inopsible -

Que ohening the clouds

Out Can that at it
it appears bright lant
it don't have Eigen

clso reflections one wali.

fainly good

two or 3 of the darker

tent colube boards

are Easely squaled

out sky line same

tent a Color as boards

no blue to amount

to acefluing level shiph to bluestell defet Weaton Stey dine of early thread.

The chadow side of a chia can be managed with pricegues of clouds in the west covering Mesky - The greater the Court the earlier in the day will it Comonflage - In a senterelle Clean oky its probable that with all the are lights that Could be used persketickely Stat Comonfluge wo out up be affective before 100.11 celack Whereas light Cleary clauds would about it at 9 @ 10 as clouds mercaled we down the Camouflage would Start Ecolier & with autiraly overcust oke would probably retart without are deplit asoun T to 8 am - Early Chantral would know to use are lights 9-40 - steen sun more meach, done - Clouds Unidened meant boards com securely 6 new Aleman without segment. Hence also same palor as they have +

Compart see Sum(dule)

del boards too white

the word timen

1035 am all white all Comoroflageable meely In any light where white arrival shows white or and the sky lime the Board theodo of companying of the board shows deak in a must be distilled so inclined it shows just white agreement sky here there is easily bear a consumption of consumptions.

Cargo Boat No 1 of Drawing
Requires 8664 square feet of
Dhitters for all Visions Factor
of this 4920 ft are for the
2 suder - + 3744 ft for
6 ooth Enclose of Cacheno Firsh
plet 26 - Mothing
allowed for Good or Status
Derhaps 500 ft should 62

lællorded for storn.
Making totæl 9164 ft Excluding the Hull116

This makes 18829 square feet of 1/6th Prick of Delect 44175 Ubs of wheat atcel also bars 1" wide 1/4 thick 61 Ubs to Each acation of 6×10 or 60 ogriff 4xfal 6 an von 9164 Ubs —

9164 bar won

53339 lls of scal

amount for foot + holding (
bruckets not yel topur

Control Nuchamson)

15016 feested 58,000,

153 Sections Equal to 6 × 10 high required

Each action Weigh 350 Lbs The movecable actions 175 Lbs Thus while 162 ok waltant Connerbalance of worm is was in Contract

The chanes are that double the 160 mg steel weels 12 necessary for frame 18328 165 whereas it of 9164 165 - but by bending 2 dogs 4 breach it may wet be necessary

110 am. now all boards very white against sky 4 Compeanoth . Can bardel are cohere sun is -See quite rough a boat rolling wife in room Readick - Not Hazy Even less than in clerk weather Landon Every Rede Creube Dean Hum Island Clear Waves look Eng Cent appear to 62 ouly 22 fact from Great to depression - one was 44 I notice fish nils and not predice on the course of course of course one beg that passes them.

(Moether is the 3/16 eingle iron on ball burge warns pound them

I shenomenon I natices in the lest of that when a conachonal and of away a year notice locants a agreed them them should be suggest among the shopped among a factor of the shopped among

Mal in 8 @10 vicles

the description of light is
not striking, the cody
bury that makes thefu
description of switch,
a talmorphia scaffing
Course some of the
classification of scaffing

Course some of the
classification of scaffing

Course some of the
course

as you receeded,

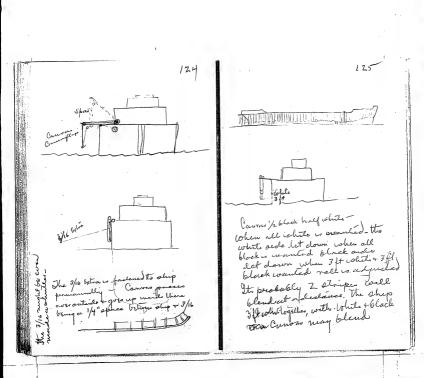
2 10 pm = Cannat find the Qun - but planty of light - 13 rands with 2 courts all VErry white Searcely any hars Plum
Island a land for neglitic
clear only vary destant
land show a lettle
hagin - thes is not true
when Sun out mat
Clouded.

at 145 km Sky averend
no sun but good
hight Boards to Exper
absolutely desappeared
absolutely desappeared
un 12 mille (ulcout) —
when about 12 miles away

at 145 pm I ward Look tell t desapeared will

Eyes glasses it desaffing

at 201 più - Roughle H 3/4 milies - Dock about 7ft Ouce about 2 n the sun Eurenely went back of a theringer cloud + let more light (him of bounds chaired up while but yuckly desappeared this Chows Coulral must 62 queck 2 grounds & to delact,



124 90% 6 Cack This will prabably blen at a duclines. Net, 10 Sections 10 ft long fener ablile, net jet black 90% Week white Comean let it down or. Ropes net all wound up crease white + cover)

Sept 25 1/17 St. 7 45 molsie allthe White Grands not yet ofripad ace them dank against skyline - just affacile Oridut pt Plumb Freezed & Lighthamo Very little haza suin 753 all very black -I note of I look at themou Jun side of boat they are darker or charges there of I look at them on chads set

arrived 8,04. 19 minutes, Raughly 3.6 milie @ 42 at ulmost, Anchored 807, Downs all white bult too dank un ogunt tent brightens as it goes from I to 12 This is him to angle with our Board whose brulegrams is the fort from point whom Radhem - is bright white 12 00 000 000 17 179

130

Ohe point of boat must be wited differment from the ather and according to pasition infraud it is viewed by outminum

/figure this out was if aft

all the other clather are white + hung permann between the Cables is the spoker upon ichich che della one secured Spake has the black eloth provided with rings day necaus af

andle Cords Can 62 pulled out to cover the colides Enlively or inested behand the colute a pulling is at End of Every bluck challe spake for

his look good

132 N green The only question is will I foot etrippes bland out 3 hicks or leas . 50,50 and well bottom of canoans stripiact taugled by wind. colite 6 out Rope relling jet black del nech orthance week 1/8" cond much about mali hale Same Ladens to needed at roll. so ruch one when full lowered, is little lower than the other a little more reduction sides brave, Opera house slage

the second

The state of the s

On Plat - deck all pomes at 1120 aug

Sept 25 - . Of 60 ands had day services 2 Coats oest white dead pount -

WE now pount strips using a shock of Pression to his conditions to his core blue to horse to his to blue to horse blue to hot of blue to hit of add to mix! The line k biller of pression of he Pountell 8 60 and to 10 1 is 95% Blue of Ecch Coard here 5% less blue blant furnish 5th Board

At 315 plant fleery about on sum - 102 70%. The best but a tills workten

than ofky line restled

136

The Captain think the Seine Nets are principals =

Must kok out haout gat a. boug bluck line when nels are up -

Hodachem is 600 years of recorny

Don't have the during brage of weaper to colon you try to a grant a det to note like Cater & Caky

Thentelle Ultrancarine cores the best as must opened with President times Holice sun was sught declar love to a govert with Ultrancarine

Inotice also NOI has a truge of large of large class wheel was no promument with 80% Ultramorning

320 PM_ NO 1 (95%) is best can agust tout or

Those is no doubt but blues are teller for they line.

326 Pell- Cloud Came over Sun a Gest was to 6 (70%) blue

3 30 pm Sunout of closed again + NO I Best, in 2 secondo cloud Came cook our or #6 was Gest m I sec No 1 best,

336 pin Now all are too light he depth af shoot within Blue Pressera To not enough to do The General on any Kourd is how seen in bright if evenes scaquire 97 to 99% blue of this Sholde.

Next teens nearest make 6 line of decker chade

It wants a blue that accome Cortain as it deproximates the Olycland bellas than Courbo.

Also in prenatice welk sheel ~

mustadjust for Z 1/2 muchanding 5 /s on board

3 42 PM - Cant see Cuprola on Low Island 11 = when acrony hagen due to parilion of very in coret

345 pm-101 enterely too colute although before Jun blessed Meriddan it was approximally perfectly Black as there ho a check sun quant squal it and or remoterancer

6 Boards now striped Can even see atripes with a Course

3 50 pu + 6 actually appears colite. Even NO1 is colitish

Hurry GE WE used too merch white lead to lighten the shade aftlie Precession Blue

Altal pure Ultramam, or Cobact progress in och without lobile Lead is best,

Mote a sample of the point period on pice of the activacty Looks green Today when Ulbramanin was pointed over a part of I the Ulbra was a fine blue

415 No 1 to 7 too white HIT #1 by against has a greenwh tinth also it now reflect light to not matte No 2 dont,

NO 1 is 95% Presentin blue themas be colitical confount so abode should not appear bleck 1/25 PM- all dotty white + NG-+ Cannot & squated act with least,

437 PM - Graly Grandman Islands
Coult to seem norther I H 14 mules
or Cupation II hules Crow to so
acon haza theorem as in the langua
does which sum is uncoested and
classific - House to Bay Such
ofthing hazay (4 miles).

Donathung corong with Not of Reems to be very unevenly Punted in worther to sheen

462 Run - White Goards hat striped heave a yellow will that though glasso

455 pin - Braham of lag acco Court ace conshows of lag acco house - a white line to forming at base of houses

525 pm 5 pue - 345 6,7 pamier # 1 tour gives look decided yellow 21+3 just a chade 525 Boot starled for House Uyeur & Bank 8 Board fundled quet for ile. 5 31 507. Dun seems to be about 532 7 4 8 gone 5 33 3/4 how above horogen of in 12345 VLante 5-34 The yellow horozon Uthat me 5-35 account for the yellow ting, 37 5 3/8 on boards - okylene un coast all are considerably about sky yeclowish -512 punt 1 now Lost when + 5 40 Rm Dock visible althotide appear Even Lohneas 243 our up + only 4 ft cabous conten 12 + 13 Vende universey pointed -5 42-pm 123 Vw - 9 also dock The 5 untriped Af all lines those ocemes a very White our very conspectioning great deference between No! Evento Eye 1+2+ Cleathers, shop is narrow & procably 6 ad pain

546 pur-cant see 1243 only the of cohote Dock can while 60 occar

547 pm Dock will gone
Except of whites can see
Whe later Even with the Eye
for Hagy
getting clinck
550 pm Cen see 4 white
boomes plan in glassin
551 pm Cohites Twinkling
553 all gone

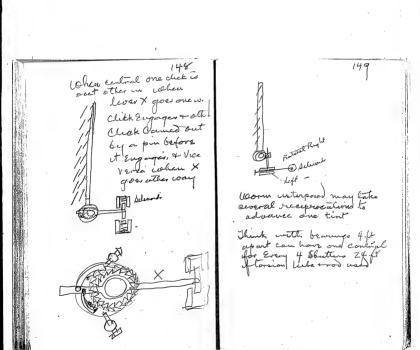
It way be established to commit or between clock houses on Carry boot to prevent seek from course du pant of carry against the Sea background fus come alone 3 or 4 mil s We one now making acrue
Whomenin Pount for Louiseaso
to restrict or to the Cha
treason blue This well licele
co deceded deeper o hinto

WE use "II M" Uttra Thade made 64 the Wramorme Co 38 Pevil Row Hely

We may with booked oil to very little timperlim so an to get a Very deep ahade a and allele drups its about as abapt an abhale is in think as if well worth plene handle

We we now going to make some not unchmach with 1/8" home cond & point it black placing I to 4 white some

to trut the hull of ship as the ship is langer object In this position than an other absenvers at a general The whole Camruflago Governey is to ause will not get a perfect regulate the light reflected from the whip to destruit a Excross so that the percent of some Computation in the dight coming from ship shall be about a lacat affermen the same as colling from the sky line, then ship will be mornible shofter on honozon torouseding the grace City is the same If 10% is reflected from Sky Ulne then the ship about reflect only 10% of it reflects less the phip will cook donkson I have sky if boat sufficate more it work to knowler Than sky line -It will be miposible to attain perfect Camouflage to observers at a distance in Certain positions direct 4 out angles to whip -It is probably but to adjust for an obserow, Light angles to longle



Thursday - 27

The pointing over the Presidenthic Stripes with despite shade of Ultramavine the did no good it was even whitey on 12+3 2le than with the Thomas of the Color is despired in hand other Color is despired in hand other despited as nothing Except dampoined with do - Dince it is imperiately and mow that the get the three about that this way your mow thinting the white with Ultramavine for 6 Good with with Ultramavine for 6 Good with the select the true the for 5 boards could be supplied the who to the start at 95% Lampoined

Duch 95 20 20 20 115 70 70 70 50 50 40 95 Block
Precession Robustini methits Ultramazione tinti in contro

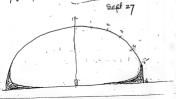
Stripes with famplifack in a little with a considerable Twip- Poor grating of damplifack and missed well, hunger

The White trulad world Pranses on the last green - Theward with Williamoun look blench both very bank out

Troncy be it wants a tille more UMwiene to match very blue aky line

For some reason the Lamphlack Looks gray Even ours Look that way but not so speay as Coursed—
Fund out best liquid to use to make there is lead or all away with the frey

How and to Morrison of Sundan to manufactor to manufactor to manufactor to sundant of Sundant from Secretary 30 and 130 pure of Links



This design chows hight bost by absorption in the seconding 7 E. E. Que scheming out a chap — This of measured for account Considering in addition to loss from ship by anything the Eo and countries of sear hight at his ting the Eo and countries of search and a resultant that well by Vilentolo

Instead of faithing chatter up
10' high a links to glether to part
them up 6' high and concern first know,
20 strips welcomed of been thorogonial
are up right The the upersacted
block tolling frames can be presented
with truck of concern to presented
with right or accessing the shallow and be recovered
the shallow are been undered
Essay from one recentor Essay
I 158 ft long but the frames
Must be hinged together as there
is no strick
Uhr, get m. Ithe whatow
Cost by Each Drug of which

I wistical when I works Willram M blue with the white that at a with piers white a straip pounts with piers which a planned or to shade yellow as agained to the like bluery we wently had to won wently had to use wently had to use try and you to use the slow sugar of ablinda the slow sugar of ablinda things of her the yellow yellow levies on the yellow levies of the

Another advantage of howmen the churchers perpendicular as that the will not bow but to have a hours no tendency to bow - On account of the loop the should be in

the parties for seconding

when on an of the black

Call be pointed white @

5% as we never nead marks

them 95% bluck a nead 100%

white

25th Seft - Wend from

25th Seft - Wend from

No shadows at 7.40 am

Except a faint lower E frights

Light practically Even acco

order

10 am cleaned up not raining

not no eight practically

not don't challow

not don't complet cloudy day

wort don't

.156 Think in wonder whom opening frages Can cover swigthing selection with Comons water them in your use Olcam pepes behind pret manyle to much frequenty - 60 of for Dept 28 from Michous your llow will Lyla gun I think we can fore 3 per menute- pecaball only I per menute coice or 60 haw 1800 200 for /a fight. ship quillouth To south -Amount of light theoretically reflected from Ship for \mathcal{M} .. Ousede of hull think Canoa. chutter 3" strips of Courses Can be used with strong mechanical device fixed to rainl. the black being

29 Sept 1917 - Very Calm-no comic Clean day bright sunshing few fleey clouds over wead Coming from Tremport

12 hours 31 locats best with the Bhuz tint of perusanan blue very very frent on 7 of grand with the first of the blue and with the following of the following o

All the way to fort bour's dark, a cost as a hagn black - arrived at I g 20 am 400 yards

grow Govers which

are a light black against a very bright sky line butte East— The alkey line is whith, probably due to clouds & hazir -

Vis by Eyts dillo garden for a father the Country of the Country o

8.30. you can see that how our white but the sky line buy on the sky line buy all hook blankish anyund very black —

59

9.17. sky his not as bright, bounds
epithing reliter, some flessy clouds in Wei
Comment or franky high high
board hersels desirtered white, com
ognist them semicolite best trice
the strong sellimate.

930 Aky here over as Emplet, borondo now Lotok pietly while herey the water coroner seem from vory thin hory one with a court family high up hant agreed auftern what

Stanled striping as described in

Sky Cannot 68 Eacted Canor on very light counts coming over out granteness, that secondary continues of the secondary as calculated to Early of the train of the

10 05 am. Coand back very white best court be agunted out floor chand-

1025 Cent agunt and yet ally gathing about about a settle court a set that you've so buy him as hear regs. There is a very faut

AO 12 nace striped teckpeare dead block with flow can just family made and that it is a triped

1037 am can just notice that ogunting has an effect,

Or Breumforth hepiter & un his aff to cleanly visible but hull is four 4-biller than devende of bolical lleve rems scorpard Sun is full on ride borowald with - 5-13 6-25 begood highliam on gull whom

1103 am Can entirely agreed act
8 9 10 + 11- (12 w stropen)
Whe 1 2 3 to account to accelerate
agricultated each to show to accepte
at Secretary Very Light of counts
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record each to be to reach
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seen include to reach
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seen included to reach
which are agreed of the
rectary arguents of the
rectary arguents of these
tales agreed only these
turned one seen
Use are so close to board

We are so close to boards to have that 12345+6.
are above sea bearbone.
4 7891011112 gulat on
Edge of sea & kyling.

11 12 and - Pression blue have a greenish tings now the Ultra is better than Pression of he work for golding collishes beat & for greenish ting to both beat & for Dofar Ultra & Gest, & Church

also ahadecould be a true despert blue willout hermin as a ky line now has tinge of blue

1125 am boards all tas white now can't equant out any but one Corner of No 3 is absolutely inschille welliant expensions probably paint who not strived Europh on 102- Think dightly deeper tent shaved go an cartie

11 35 am - greened timps now desappeared from Pressurement blur 600 ceredo - 1 + 12 getting Leghter should boards (Coheta) getting very white -

1155 - Okylene at 60 ands now districtly Chus bust, best there is wary lettle defenence, but the clink share of blue should be deeper- so the whole in shade should be distinct blue or not as now sewed delectable - Can delerm bust at Laboratory by wanting of Lextung aguarit a skylina -1210 pm - boards very white + 12 bounted NOZ partly for 12 getting lighter behave graysh black I no 2 Shade lighter as far flerry Clouds less Wan at 11 pui

12 30 km / 102 shows 165 caps of squanting out its grounding out (Low liche)

Charles port flower a separated Charles port story lever NO2 met story being priented as a part of the part of NO4 being priented on its part of leve about the about

10,5 m Johns Lebrard out to send Jamely well a Cuports or It on new Hourd Caporel grandens which then to see out hapte hings - you'll be grate blish should in worth whiteh in so outh - sem not benefit cloud sove it, land, Thispeed Look block

Illem-Corner of No 4 Thisped Enterely agreement out (sun out from hunder of form out of sun out from hour get verfleathours on waller from while Committee generally Hazz showers to Calm will musually

230 per 104 almost color skylini only partly partied - at one time account, of Boris and recommy wellow agreement, 11412 now stripped - 142 4 partly -

245 pm NOZ + 11 almost squalable

3 12 pm Ao 3 is best 10 recombest flerey clouds more sumwind now from twent, see yelling Chappy 6" warnes

375 No fee best, Eastern
Stee line treng blue
For and, then twe good harmet
get the write that it is a duty
blue. Countmation @ mat
reac blue and may want
more uttransorm bluch
would be bod for the neores
would be bod for the neores
would be bod for the neores
and hardes - which lecuephles
should be blicked not
pray - but they are very close
gray - but they are very close

When one is night for the sum of cover of box Ultra II best (I through closer to be and I tolay the night cover of cover of the sum of super successful the present of comparison the present of the pres

167

405 pm 3 when but it has a getting the front of the front of the front of the front of the format of the got mallo or front gray and it is —

440 5 the state 2 better 440 the state of th

gang for Coal to Money

169 Left 505-60 will all What surprieses is The medicine to ace the white or movies on dwik -515- The FI NO 5 NO H Christoforcupy Their offe Hanay & own Trapes no white seen with yless hanted much bright 4 5 is least visible The Corraphy and en Oxychloride of Burnath is plusty sede is merely Known as Pearl white for paint 520 km ("11 acc 105+8 Sunday 30 Sept I notice at 515 going from Whoulor gane with glower to freeupont that there everecloud on the whole hongon & Chaf NOS Whicher not fully quested to locat blacke the sky alcove a clark cloud 6 4-y are still white bank on veky line was light muit a triped has they treen hed sh all around the horogon Sun set no rays black Lackgut elacks) they would have disappears 6xfot2 548 from West, Lightin 3.1 miles to francy bright daylight yet

DEpt 30th eve but tanky blue whowhard Youcent to date of progress of at que clouds all coerling where hove they come to Experimental part: treatedly there decround ohining so strong as ercent funched amouffage. 80 Smoke bomb 3" qun All painted (It i pe) Pariscope sighting 50 60% Lyle gun smoke 60000 1135 am - 6 is very considerably 50 Kite Rudder lighter 4 man sky line than 7 Fake Dicamer smoke buon 60 90% Brottenhand Jorpedo delector 12 w douber Chain 1 40 50% Mouna Think isotalad alocado come Submarine detector, Under Water projectile roun 50 over our briganely. Anthracite Coal in D Zone 100. at no time affice 11 30 Could Cutting Masts + Slacks 100 No 6 be entirely equinted out - now 1/50 din -Morrison was at q ain repassived the Oky line belivean boards Wate Mannaows expert gave 432 Camble power or says 6x12 board subout 1 humans per square fact. facing East, Duly has Vay Eye dead white No 6 of explacting to blackschouds in sky ousk Light of 65%

Iltrick the shutters whould be Note Vol11 part 1 Klumgan 10 222 sugs Dolushed Mickel or ting the in termscape only 20% office Coult paint put on it so as to suncher the abserver deflecting light + 11 Wha slander trenscope length 22/+ Dead 7@6" weshould gut 80% Efferen - Laperdiny at head to Z'=" which will nelp very inde 19% of 1 plut scred is useful 12 37 pm NO 4 co Gest Eat Cant led agraniced out enteral, 12 revon sun free of chard 10 pm No 5 6est. NO 6 nearly squentable sent closed Exclande y not spictace-4 6 Est Note = heard Dreadnought guns pecabably 10@12 Don't think tenting weeth blue Mules away shacking at larget the 2 shots alone is any good- did teller coelland not less than 22% Loqueller strong Edesen heard or Easy for a microfone we have Wants a lottle white 1207 Conjust squart set 196 but well Refferen y not so good

Note = first blood for hers

quind - 45 deg Explosed

too head rip - had make

35 deg - explanted near wake

best tumble heed no rape

4 of the property

5 of the property

Conting of promise of the conting of the co

out, still bounded with

Isotaled Clan

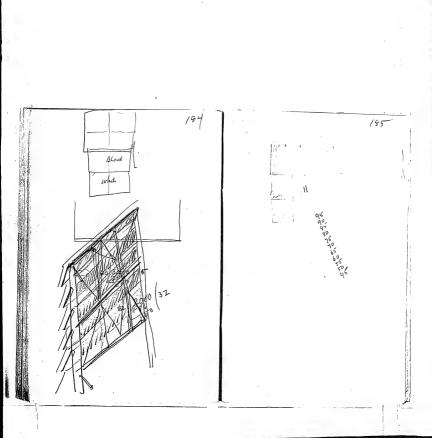
It seems that the skyline does not Varry much in Court pawer up To 3 puly just getting wary 10 % brighter at 3 pm hier the Country when a and warrain Concections rom 6 35% colute To \$ 20% colute Efthere was no skyline to Compoure caille the 16 .. Clar reported (& necessary & To make boat upper neither white black - They it does ak out when qually is concerned 4 Comparison made with Okudine which we and the Companison is not Derfect There is an illusion Dowelling needed as when neouly desperound there is a hazzy Extrementy Light tent of Alack schools which is contile Verge of disreption Amay 62 dale 10 5% uccommits too pocant

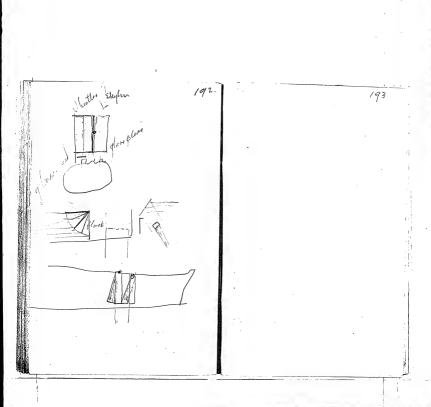
or coard of a blue tinge, of weeds blush tinge it should at 68 in the colute of might 6% recoped in the black but I been been our colite w not gotd+ has some bluck in it or willow attal water police Mickel or aluminous is use tragood white sent get on this there well be seen imperavement Linear is called +dries vallow A some while substitule stoned be form society the Colodians or Schoole Sada or a colite resum Yourwest WW Rosen Ele_ Should also 62 matte + Block should be dead Clock not gray & also mills 420, pm to 243 6 Est

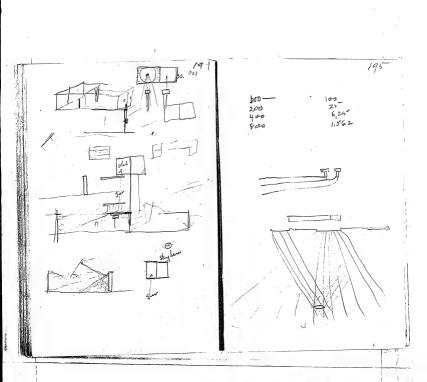
5 25 - Sun just celling -# 6 tras down court against of accede-1 + 12 block - Eng cloud deep on Western Oky home -5 50, NO 6 + 7 Squents Bull OK - Chick - 1 /2 vary black -

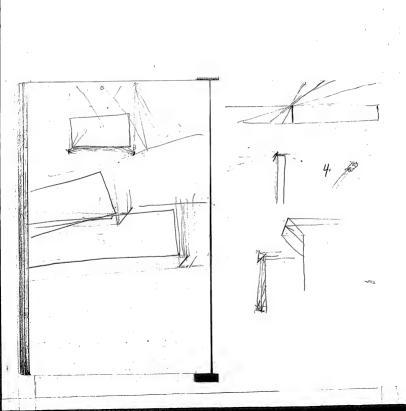
4000 6 le and Ala

180. 181



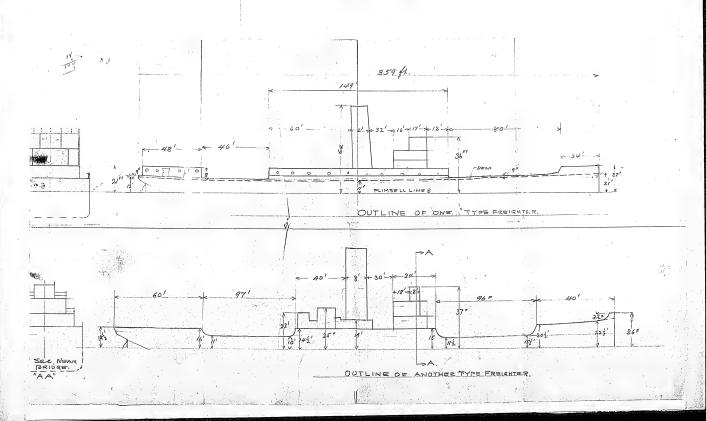






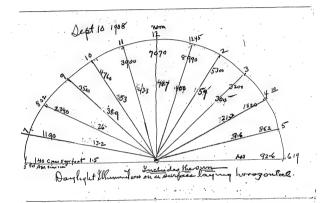
4.30 - Rosey - East & starry - all black "Coon see that No 89 10 is not 20 Clark Rosy Estend Garly to plum

[ITEMS(S) FOUND IN BOOK]



Notebook Series -- Notebooks by Edison Notebook, N-08-09-10.2

This notebook is a continuation of N-17-09-15. It was used by Edison and the USS Sachem in October 1917 in connection with his work for the U.S. Navy during World War I. The entries relate to visibility at sea and to camouflage experiments conducted under various light and weather conditions. These include experiments with ships camouflaged by different means, as well as experiments with painted boards of different shades erected on shore and viewed from Long Island Sound. There are also entries pertaining to a kite rudder and to smoke bombs. At the beginning of the book are two pages of data from September 1980 en davlight illumination, which were apparently copied from a published source. Edison's notes indicate that the Sachem cruised among Gardiners, Plum, and other islands, using Greenport, Long Island, as a base of operations. The front cover is marked "No 3." The pages are unnumbered. Approximately 30 pages have been used.



Maximum Munication altainable from the sun - Municipaling obtained on a surface derectly facing the sun at all times

a gun arthung lelegare a outy lette 32,5 % ef the light Thom.

In persocres (modern) has someony optical Elements Wall only 19% at the leght searcher the Eyz ufthe colorary of persocres have low magnet of on

The prenaple involved is like taking a laterace to Experience the and another to Experience with Exp prents feat Experience with Experience in allow preach you Condense of their world you Condense of their indenges.

I looked thrus the beg 2m of Ofens glass at booters which were found, vertle direct considered see them harden of the Eye price was put to the Eye price a second Opena glass it wo neake it words here Storperunches are poor peropositions for occurry as feeds at a destaman, There is another bad thrum about a periscope There is a Loos of brillians acoutrast in the surage which is quite apprecamble. The Cause for this is light which has underfore 2 to 4 baffertions The light slightened from the second occurrence of the first house well return again from the every so it will strike the first senforce afterno - some of it well to again reflected lowerd the Observer Similarly light reflected back from the first wich hat the back of alexation no 1 apart of at water Go and

to the elservas while the recurandos well impingo o celli front ownfra of abjection No! apart of that well be Ideflected to the absencer Eine Add on ale thom those water Now all this reflected by let don't contributes anything to the brightness set the pichine for it Lant come to forces at the purapa point of how to own found points 4 wont afform attheplace where Weltrus unage Lies It Charefore forms a Vail of stray light over the preline which delirado from its bullianos

I think now I have the Explanation afthe Comouflage it is This-The oky line has a contain diminosity, it don't appear to. Very much burning good light Now White boards + blackboards will look bluck + white Even if there was no oky line to Compare with, assuming the sky line Radiate a Constant grandit of light during the day all that is necessary is to regulate the shutter that the same shall radiate only the same amount of higher as the Sky line, to do this it requires that the shuter quest go from 100% white to

Oct 1 Measurements made oday by statomate I the light due to the oky line It the lumens ber for above the water 1.4. under The 40 05

It looks from this that whiting 17 of the light afrom byther of the light afrom by the of the light afrom by the light with an analysis of complex or soon without Clouds but human without it will to the business with a sound the total to the business with a sound to the business with a sound to the soun

Sachum anchored in life with fruit but of Great Courts from I stanned digit herease If had offered from Foot Ot 145 am Clain almospheric in every part searcedy a trace of hand ever with very charter of hand port of mand, up in our + double by reflection The 2 gull bland part below horozon bland in air, till boards have desaforated the above observations are from atanding on dock There went be pour remerkedela masson for desappaaren of board

or the plat to see prome of board of an alroom the sea refrection on the plat house boards are way up or limit double

for | | | | | | | | | | | |

But down on deak only now then see the board on single not double they will show up fautly then cloopsear very continuents showing

breet the whole thing is due to a moving lauffer of air near the sea to section the sea of latter full highly windless shore him by gull at houses your no heave at all - Dea quet 2 or 3" warms all - Dea quet 2 or 3" warms

very Cottle wind -

I just tried a nurror on the white colored an occashom of it certainly gives queent promise. The yellow hacke Expaned direct to and shown before the willow of a studied like with af the nurror of a studied like with a fall of board 6" It or white oid got to got to will alway up.

Theremay 6; a translation was due to spelaling management due to spelaling at turnely

Control of the Contro

Weather wont effect for if Iky shows no sun boards are OR and needed in owny of super Oct Z Sachem Expenity with Kite Ruddes - | mile from intfant all boards absolutely mky black Sky blue + clear all presented no claude hardly any hage -This is the Conditions ideal for Very bluck sheedows + we thus hectore them Frohers Island clear but ballow muraged, Montank light House clear seen with warkend Eye Easy. Water nearly glass + uplaces glans I have the 6" string of 100 merrous outhe white Goard 6x12 on Dachen in shadow - It ocem to do the big brighten up whale sentake very much

I may be shuther places could be metal matter bearing or tocked and then write Luffer, Lay Exper Third a piece of time muthed ten fail + white glazed paper -In shade x matted fail - when close to ylanged paper so very runch reliter fail dank . head color but 150 ft away both looked white Couldn't tell junctions at several fit think for want 62 white as it must inflect more light, a Malle Minor also would

Concentrate, take seeg necessor 1050 am all boards very black Jachen 700 yrels according place place you no wound lee Monteville dight hacer family with Eyen sharp wind clear weight glames Estending way up tike a pleamer solvier of miles a cleaner solvier of miles a way your through the content of good crayy.

Il 12 to 6 shows when went that

Shat off Lepla - Short hydraulea

400cc Olen - Jun 45 day

Explaced top trajectory

It was very white for 4
minutes their got themes
from manches grand
can see it much special
ant 10, minutes aftermed
thestrong Contamina
prekakly make it leftered
Notice it dishut pettle
down but keep of
for Lohaca 10 minutes

12 Noon Note while but Count be aguited out No 1 + 12 Dank brown
145 of No 9 squarts out No 3 aguint gland

Sachen of worming angle to eleseror. 210 pm/ Esland believen 19 + 10 bounds of Sun 20 11 Can so face alone of the sachen labor for angent of angent of angent of angent of the same of 210 pm from the same of 210 pm full the same of another there are 210 pm full the same of another the art 210 pm full the same of another the art 210 pm full the same of another the art 210 pm full the same of another the art 210 pm full the same of another the art 210 pm full the same of another the area of another the same of another the s

just as left mouth - cloud

50@ 15 ft up 500 CC

Fisher Kaland a part

Iccach sea line Covering out 6 4 7 seem pure colite /4 to 1/2 milegood for 8 ments Qky Cloudles .-Govolm. Istand climent for sky line - Gengrado Stale in sight up, in Oky line -after 12 mines Wout Clink secomeprobably can be acon for 20 minutes Viewing boot grantly Extended. after 13 minute grute a section is on all line famely think Tatheraley alsown a lettele land to out finder Eccount wheale I clumb is main + sub that it well heake as reiech deformen as I chample a wiles Showed Compiniste

355 pur on way to greanpail No 10 desappeared weeth Eyr perobally 2 miles perubably 3 mily will glass desuppen absulately - No 4 many about onme but not so good 1243 dark - The schows 5 / s us too general a imp It. 2% is made It is surgues they don't Consespon 3 is quite dank when 10 absolutely desept

duyle may have little to do with it, 358- 6+7 white 4 Congression - 548 alcourt Quint text,

H= Now suffection boards twee as high as weeke amora conspecced 10 a 4 sometime flack up vary formery past a little aboam of Orient point. 4.04-4.410 nut scan

ather about see

4.13. all gone havet but
put look - fortelands
ent vary bright or colicte we locate from human a
one still a little post
alcam of Drient yound

Board 6 X17 while
on Dualling the herman

Even welcom and
to made trilliant for 14
of it a over whele
elverings than the aun
done of at anyle

Grayon Pencils (wax)

In very deep phade blue is next to block next is green
Next is green
Next is yellow but yellow is rery near white,

De tried and light on board loday Clear (O'Eslam a Shar board on Dachem in shadow but rather light from colita house or board natural cock - Spot with one lines 2 I don't not very bright would say dockke bright would say dockke brightims are alrong looks happeless

with Mentors Can get point of surface Very bright who the Maccandes emph probably hopeleans of mentors of surface of the Spots all over series by making to make the state of the spots all over series by making heavy with automates for pendod peters land make for pendod peters land make for pendod subject land make for a little while towards for a little while,

of follow the sun when ralling of the teling, it could be

Scotly of whomelar which

9 trunk -

For Camouflaging half when on Recent school think Could Pleater that white of their livings it in schoolow by Camour worth halas in to lat Them right amount of light to 13

The could be done up to gumenter then the light demination of the beautiful of the control of the country of th

Inco painting hick on Imflake white from tuke Reg Canb fear Reg Canb fear tuke & Register of play 6001-Time white from licky, Basuljus - Ng durty yellow

I notice in very dank place to headed clark or which headed white best of Y kend to meanly horogeneal To hooked bright glockells at that ample headed black as composed to ling

the particle over chale with bout looking brand siche very weak green particle treflet out into spree generale but when lacking at aught the particle over whale with board consculrate their rays in a narrow line a their personner brightness — Thes well by BAII —

probably necessitale the number of the shutters - I Chan may not so it = Expent,

Excluding Maon

Darkness -

4,19 July مدهر 29 .7 . 29 nov Dre 11 20 11 29 Jam, 10 45 7464 March 9 50 April 6,19 4.40

from Twilight to twilight PA Euglish Coa 5,42 am 950 7.17 april 4: am /8- 8pm 1600 301 am 6.19 8,42 Way 2 12 am 4 40 9 32 1920 4 19 9 48 1941 207 2 50 am 18 20 16 31 729 8,09 3380m Dept. 14 53 13 31 10 29 12 40 11 20 6.3 Dre 5 23

18/ 28/ 15 13 2212231254427日18382211847361254 16 23

Bout how of Can (Screen or dauges) Occurrences

Notebook Series -- Notebooks by Edison Notebook, N-17-10-18

This notebook was used during October 1917 by Edison, his personal asstant William H. Meadowcroft, and an unidentified employee. At the beginning of the book is a one-page note by Meadowcroft entitled "Torpedo Boats," followed by several pages of statistical information copied from the 1916 Shipping World Year Book and other published sources. In the middle of the book is an entry by Edison entitled "Notes from Consulting board meeting Sat Oct 20 17". His remarks pertain to the problems experienced by Allied merchant and naval vessels during World War I and the strategies employed to deal with German submarines. Three pages of additional statistical information follow Edison's notes. The front cover is marked "War." The front flyleaf is inscribed "Miscellaneous Information Cat. B - 1917 to." The book contains 5 numbered pages followed by 11 unnumbered pages.

Miscellaneons
Information
Oct. 18-1917
to

73498 Official Ca.,

MEG. STATIONERS, 96 JOHN ST.

Torpero Boah

a How long does it lake for a confuso boat at next to stant and read?

A. Using 2 boilers 24 Knots can be adamed in 5 minutes. In 20 minutes this operat com he held and maintained indefinitely.

Q. Do Lorpedo Coals make much conotee when running fuce opered?

A - Oil burners - none Coal burners - almost always -Considerable

How many oil and lott burners in American Many Cit 53 " " Coal - 21 British Many (Oil 105

". " (b no detail Kurwin French Mary ail 24

. . . Coac 69

arrivals + del 3, 0 2.0 5,0 Bristol .7 1.2 Caroliff 9.8 13.9 23.7 1, 6 2.4 1.3 1, 2 2,5 3.3 3, 3 6.6 2.2 1.1 1.1 5,0 8.1. 3. 1 1.1 2.1 1.0. 2.6 1,3 1,3 3,2 3,5 Trimby /, 」 1.1 5,5 5.9 210 1.9 10,3

Shoffmy Data (Shoffmy World Junter Brokent Frade your 1913 Entered northern Posts 876 11.2 4099 3,594,549 8,8 3204 2,358,933 735 nomay 9,9 3625 2,76,289 599 Denmark 665 7.7 3,799 1,860,157 Netherlands 27.7 9,359 8,570,797 916 42.6 15,527 10,918, 454 703 France Sham 8.8 3.243 3,405,438 1050 1670 976 1,629,136 2.7 Montes States 4890 511 1,856 9,083,510 2970 2.8 1,009 2,991,591

Shiffing Somes Steam Kissels, Blake Sons 17,037 7.04 prices 16,013 .60 8.52 ,26 16,013 369 2,649,000 8.65 Mucho 165 173,635 7.5 2 Collisson 17 1,96 46,012 Jugues of mechos and collision from

Submann milnigs. Bened on milnigs Jul to O St - 1917 Comb of highest could France. Malundty of Auto mirrores Bratish

Dennish Dutch

Outch Frank Monogen

Kussia

3,5 70 180 230 85,5 144 76.5 Wisin Wholk of puth the 40 24 Mortaglier almanach Janmary 1917 - Whotaglier almanach 3.5 lovers.

Notes from Consulling board needing Sat oct 20/17 End ordered with high separa 3 Escarting all Coepital al po by mary tallo Slower ships are helple Nobody sucognized acrowness of Lound out it was of Druwwy theportomes -Camablage then Come in be Duncke berten sto Es corts, Konvays Dulanarenes out but 170 wast walout limit of perectal Operations but their will be increment Come der wally by bring out the large Crusing Subs wow had training crews but will coon appear

greatly moresso the Zone There are to afthere ships in Arming of chips in continction row at Eden Elingh 4 they are building with distrol tescent has kept more The Commens are very Quetnicorein below the water much extracted at Them -Those is very little quen fire from Declinocerned now, it is On one ohip the accomed to now near y for them to fund out by Externac a sectional use more Toxpedou Indecation of any gun located Cast chapped his Dand to big gungerew came into action. Hermans much afraid visitine Scom "No cohere" Michael ships at which you Conceiled - Court ace any June under deck hotels. undication of a gum, but they have Elevated by sumoving hatch Bomb Therowers yours ele When Craw in Locator Closeto + all stapped by a Subne by signal mainer of places, to hide so atterraces, they all deallow There of certain ton ship + get cliar to induce he Decome To come up + bomb her then away flies the the fitse of the chip of a family the form of the grant of the ducking of th Sheaking of a boat Inepeted should had depth ferrer on Time control station totheren plat Done officer stayed by his she rouse of they works until it was almost sunk but he got the subm

The Chamands of orenels Every lettle fealing Craft, duty classes looking craft are Egupped well consented that have a one going acrapa the channel they have not dost a man from escontal Medals + guns all warting for Duci A olupa-Auroraft contral is in as They Excort the versely all the Complete Operation on the way down the Coast to the would permit - of to navi medeterranian Those an alle Convey sicks their up, The medilerrain Conval If an acronaft is patraclein recently organized with depth change tonpelos submarely want Come up No matter how occase ful in for long The acroplan defension hunt Take offension work 60 miles from share to beceer Theteordency is towards Offenews Weltrades a Mining langer sea places (auraplan) Okenation off Achogoland to ght They get as low as posseble basemuse read is rough so rather haphaggand. The Couldined winin They use acroplane to Openations has resulted in the potral the Channel route whoesplace bring feed up & generalles - so to

Stral clast court get with Muned 100 miles out of Heliopal Ballic Pexcept at grant nok Therefore Court our empfuely so England can't help Russian lay a mine Barrage Brittian how only 7 sucho in and Helergolam Battic Mani - Even officet Could get in would see alande Dubino not Exit from be leattled up by Farman English have very fast heator boat 60 ft long with one The largest go out them. Danish neutrol waters torpeda over stern pruming in Dame devetion boat a for They have a lat of English subs up on Danish Coast drops torpedo over stand in Some develor boat is to hunt The I carniere Que , sthey have been fairly quite door gotten into the male authorgad in shalling frater of Zwilbringgo + Lamaged the ollips there & once what will perhaps and looking for barring Externam Enoland they on Lange acraplant Gen have commend of the der No more sweepers can get coellier low Lendingge Coast Excont 30 miles of Heliogoland their automours out of Zurbugg by Cerroplanes

Alher wa slightly whend Lectemorens have to keap on Runface for set at least 20 wiles to clear the. Cheals at Zenburgge. of the 210 acceptant to Versels at Zea supported w Wouldess year 600K of 1917 only ten were due to

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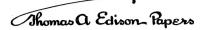
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